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# **WATER SUPPLY OUTLOOK FOR WASHINGTON**



**U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Collaborating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF  
**MAR. 1, 1974**

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: Snow Surveyors near Ship Creek,  
Alaska snow course.*

U.S. PHOTO A-272-11

### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia





# ***WATER SUPPLY OUTLOOK FOR WASHINGTON***

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

*Issued by*

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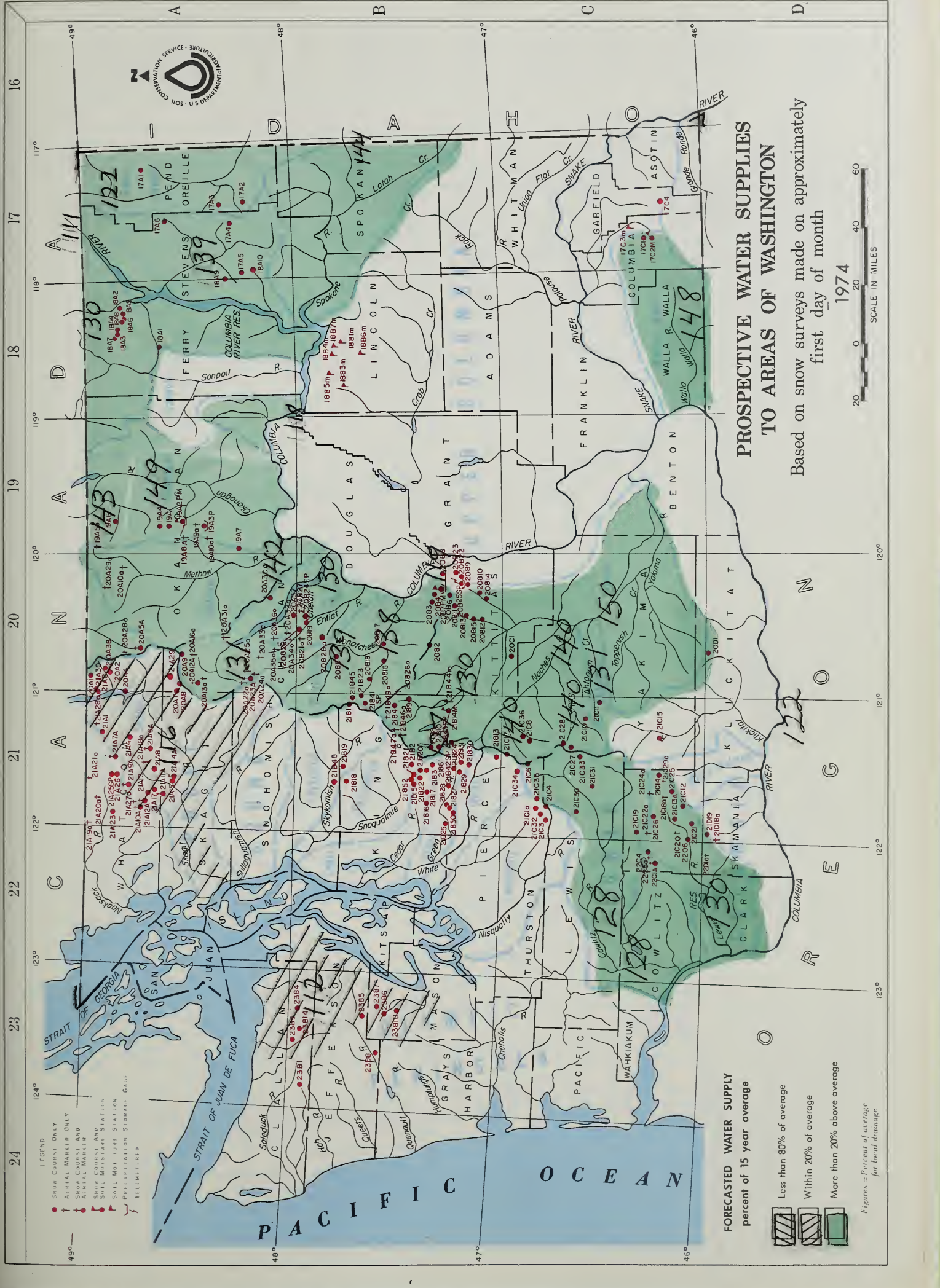
*In Cooperation with*

JOHN A. BIGGS  
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|||||

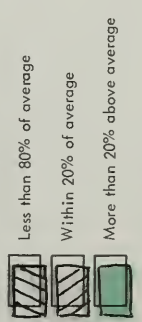
*Report prepared by*

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SPOKANE, WASHINGTON 99201





FORECASTED WATER SUPPLY  
percent of 15 year average

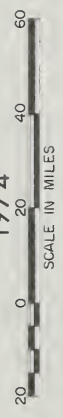


Figures = Percent of average  
for local drainage

# PROSPECTIVE WATER SUPPLIES TO AREAS OF WASHINGTON

Based on snow surveys made on approximately  
first day of month

1974

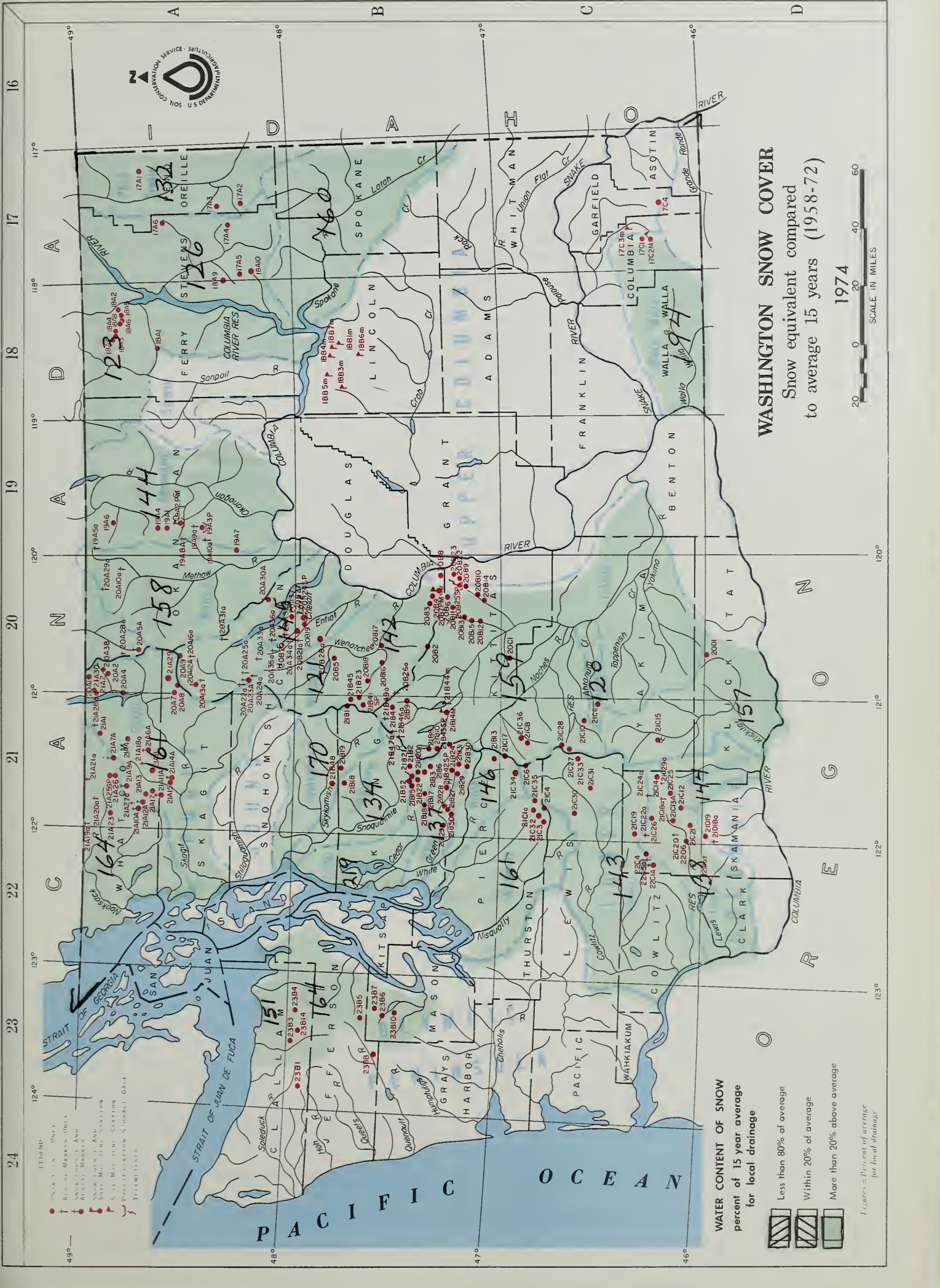




# INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

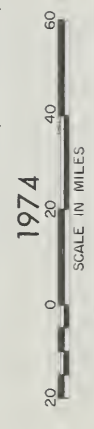
UPPER COLUMBIA DRAINAGE				Wenatchee River (continued)				Lewis River (continued)				PUGET SOUND DRAINAGE				Skagit River								
NAME	NUMBER	SEC.	RANGE	ELEV. '.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV. '.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV. '.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV. '.		
Pend Oreille River				Colockum Creek				Lewis River				Nisqually River				Skagit River								
Boyer Mountain	1742	7	31N 43E	5250	Trough #2	2082SSP	10	20N	20E	5310	David Meadow	21C29a	21	9N	10E	5600	Beaver Creek Trail	21A4	35	39N	12E	2200		
Emigrants Meadow	1741	24	37N 44E	5000	Colockum Creek Upper	20822	11	20N	20E	5300	Grand Meadow	21C25	28	8N	9E	3500	Beaver Pass	21A1	9	39N	12E	3680		
Winchester Creek	1743	30	33N 43E	2970	Colockum Creek Lower	20B23	1	20N	20E	4300	Lone Pine Shelter	21C26	8	9N	7E	3800	Brown Top	21A28a	26	40N	12E	6000		
Kettle River				Squillchuck Creek				Lewis River				Nisqually River				Skagit River								
Boulder Road	1842	36	39N 36E	1450	Scout-A-Vista	2083	12	21N	19E	4400	Marble Mountain	22C5a	24	8N	5E	3200	Devils Park	20A4	34	38N	16E	5900		
Butte Creek	1843	28	39N 35E	4070	Scout-A-Vista	2084	18	21N	20E	3400	New Muddy River	22C6	36	8N	6E	3100	Freeroot Creek Trail	20A1	14	40N	14E	3500		
Cabin Creek	1845	5	38N 36E	3170	Scout-A-Vista	2084	18	21N	20E	3400	Oldman Pass	21D19	22	6N	7E	3100	Freeroot Meadows	20A2	8	40N	16E	5000		
Goat Creek	1844	26	39N 35E	3595	Scout-A-Vista	2084	18	21N	20E	3400	Plains of Abraham	22C1a	35	9N	5E	5E	4000	Freeroot Meadows New	20A38	8	40N	16E	5000	
Snow Caps Creek	1845	3	38N 36E	2150	Scout-A-Vista	2084	18	21N	20E	3400	Smith Creek Road	22C2a	29	9N	5E	4100	Grante Creek	21A29	25	36N	16E	3500		
Snow Caps Trail	1846	5	38N 36E	2720	Scout-A-Vista	2084	18	21N	20E	3400	Surprise Lakes	21C21a	14	7N	8E	3400	Lake Hozomeen	21A2	19	40N	14E	2600		
Summit G. S.	1847	20	39N 35E	4600	Scout-A-Vista	2084	18	21N	20E	3400	Table Mountain	21C23a	20	9N	9E	4250	Meadows Cabins	20A8	29	36N	14E	1900		
Colville River				Stemilt Creek				Lewis River				Nisqually River				Skagit River								
Baird	1746	19	36N 42E	3215	Jump-Off	2088	34	21N	20E	4450	Timbered Peak	21D18a	36	6N	6E	3000	Thunder Basin	21A30	15	35N	14E	4200		
Carlson	1849	34	32N 38E	2885	Stemilt Slide	2086	30	21N	20E	5000														
Chewelah	1744	11	32N 41E	4925	Upper Wheeler	2087PM	50	21N	20E	4400														
Stranger Mountain	1745	26	31N 38E	4990																				
Togo	1840	6	29N 38E	3370																				
Sonpoil River				Crob Creek				Cowlinz River				Baker River				Noaksock River								
Sherman Creek Pass	1841	19	36N 35E	5350	Creston-Kunz	1881m	32	27N	34E	2440	Gayuse Pass	21C6	15	16N	10E	5300	Baker Pass	21A27a	1	37N	7E	4900		
Okonogon River				Jack Woods				Mosquito Meadows				Dock Butte				Bald Mountain								
Clark	1948a	2	36N 23E	7000	Krause	1884m	28	27N	31E	2750	Ohanapecosh	21C19	33	10N	7E	4100	Dock Butte	21A11a	8	36N	8E	3800		
Muckamuck	1949a	20	36N 24E	6750	Sheffels	1885m	21	27N	32E	2420	Packwood Lake	21C32	28	15N	10E	2200	Easy Pass	21A7a	19	35N	11E	5200		
Mutton Creek No. 1	1941	30	37N 24E	5700	Shemman	1887m	17	27N	32E	2378	Pattai Peak	21C31	21	13N	10E	2870	Jasper Pass	21A6a	17	38N	11E	5400		
Mutton Creek No. 2	1941	30	37N 24E	6000	Wheatridge	1887m	24	27N	33E	2440	Potato Hill	21C14	36	10N	11E	4500	Komo Kulshan	21A17	31	37N	9E	8000		
Payday Creek	20A28a	32	40N 18E	4300																				
Rusty Creek	19A3P	18	35N 24E	4000																				
Salmon Meadows	19A2PM	33	37N 24E	4500																				
Starvation Mtn.	19A10a	15	35N 23E	6750																				
Touts Coulee	19A6	30	39N 25E	2845																				
Methow River				Yokimo River				Lewis River				Nisqually River				Skagit River								
Billy Goat Pass	20A10a	10	38N 20E	6400	Altatum R. S.	21C11	26	12N	14E	3100	Corral Pass	21B13	30	18N	11E	6000	Deer Park	23B4	1	28N	5W	5200		
Dollar March	20A29a	8	39N 20E	7000	81g Boulder Creek	21B9	23	23N	14E	3200	White River Campground	21C34	4	16N	9E		Morse Creek	23B14	29	28N	6W			
Harts Pass	20A5A	7	37N 18E	6500	Bumping Lake	21C8	35	16N	12E	3450	Green River	21B24	18	20N	11E	1800	Cox Valley	23B14	29	28N	6W			
Horseshoe Basin	19A5a	15	40N 23E	7000	Bumping Lake New	21C36	13	16N	12E	3400	Charley Creek	21B25	27	21N	8E	1200								
Long Loop	19A7	36	34N 23E	4650	Colockum Pass	20B99	25	20N 20E	5370	Natum	20B13	4	20N 19E	3875	Coagor Mountain	21B4SSP	21	21N	8E	3200				
Chelon Lake Basin				Yokimo River				Lewis River				Nisqually River				Skagit River								
Cloudy Pass	20A22a	12	31N 15E	6500	Donery Flat	20B10	17	19N 20E	4123	White Pass (East Side)	21B49a	12	23N 13E	3024	Grass Mountain No. 2	21B827	14	20N	8E	2900				
Greenwood Flat	20A25a	3	31N 16E	5540	Fish Lake	21B4	34	24N 14E	3371	White Pass (Leach Lake)	21C27	1	13N 11E	4500	Grass Mountain No. 3	21B829	12	20N	8E	2100				
Little Meadows	20A24a	8	31N 16E	5275	Green Lake	20B11	3	21N 13E	6000	Lynx Lake	21B50	21	19N 11E	4700	Lester Creek	21B50	21	19N 11E	4700					
Lynn Lake	20A23a	18	31N 16E	5900	Grouse Camp	20B12	3	20N 19E	5385	Sawmll Ridge	21B31	5	19N 11E	4700	Lynn Lake	21B50	21	19N 11E	4700					
Park Creek Flat	20A13a	18	34N 16E	2220	High Creek	20B14	22	23N 12E	4624	Snowshoe Butte	21B43SP	14	20N 11E	5000	Sawmll Ridge	21B31	5	19N 11E	4700					
Park Creek Ridge	20A12a	7	34N 16E	4600	Joe Lake	21B46a	32	23N 12E	4624	Stampee Pass	21B10	25	21N 11E	3860	Snowshoe Butte	21B43SP	14	20N 11E	5000					
Petersons	20A16a	3	34N 17E	3730	Lake Cle Elum	21B14N	15	20N 14E	2200	Twin Camp	21B30	18	19N 11E	4100	Stampee Pass	21B10	25	21N 11E	3860					
Rainy Pass	20A9	21	35N 17E	4780	Lemah Creek	21B14N	15	20N 14E	2200	City Cabin	21B3	10	21N 10E	2390	Twin Camp	21B30	18	19N 11E	4100					
Safety Harbor	20A30a	32	31N 20E	6300	Menashash	20C1	24	17N 16E	3935	Mt. Gardner	21B22	31	22N 10E	2500										
War Creek Pass	20A31a	34	33N 18E	6500	Horse Lake	21C17	4	16N 11E	5400	Mt. Gardner Aux.	21B22	31	22N 10E	2500										
Enfior River				Asofin Creek				Lewis River				Nisqually River				Skagit River								
Blue Creek G.S.	20B28a	19	28N 18E	5425	Spruce Springs	17C4	9	8N 40E	5700	City Cabin	21B3	10	21N 10E	2390	Black and White Lakes	23B7	17	24N	5W	4200				
Enfior	20B19	34	28N 19E	1600																				
Enfior Meadows	20B33a	28	31N 17E	1800																				
Enfior River Trail	20A34a	2	29N 17E	3150																				
Four Mile Ridge	20A27a	15	28N 19E	7000																				
Four Mile Ridge	20A36a	17	30N 18E	6510																				
Hope Ridge	20B20	22	29N 18E	1300																				
Hope Ridge Snow Pillow	20B24SP	22	29N 18E	1300																				
Pugh Ridge	20A32a	34	30N 18E	6400																				
Shady Pass	20A37	20	29N 19E	6200																				
Snow Brushy	20A35a	21	30N 17E	3850																				
Tommy Creek	20B21a	10	28N 18E	5300																				
Wenatchee River				White Solomon River				Lewis River				Nisqually River				Skagit River								
Berne-MH11 Creek	21B23	7	26N 15E	2225	Cultus Creek	21C12	35	7N	8E	1000	Alpine Meadows	21B48	31	27N	9E	3500	Black and White Lakes	23B7	17	24N	5W	4200		
Berne-MH11 Creek (New)	21B13SP	13	26N 14E	3210																				
Blowett Pass No. 2	20B2	35	22N 17E	4270																				
Chimwinium G. S.	20A16	1	25N 17E	1810																				
Lake Wenatchee	20B5	33	27N 17E	1170																				
Leavenworth R. S.	20B17	1	26N 17E	1127																				
McClure	20B18	4	26N 16E	2110																				
Stevens Pass	21B1	11	26N 13E	1070																				
Stevens Pass Sand Siled	21B45	12	26N 13E	1200																				



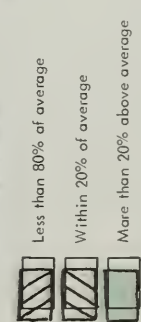


# WASHINGTON SNOW COVER

Snow equivalent compared  
to average 15 years (1958-72)



WATER CONTENT OF SNOW  
percent of 15 year average  
for local drainage



Figures = Percent of average  
for local drainage



## NAME

LITERATURE

## WATER SUPPLY OUTLOOK

State of Washington  
March 1, 1974

\*\*\*\*\*  
\*\*\*\*\*  
\*\* Another serious situation could develop in the watersheds of the \*\*  
\*\* state of Washington if above normal precipitation in the form of \*\*  
\*\* rain and snow continue for the upcoming months. The current \*\*  
\*\* forecasts and measurements do not show that the situation is as \*\*  
\*\* grave as did occur in 1972, but the potential for high water is \*\*  
\*\* there. Currently, both snow course measurements and valley pre- \*\*  
\*\* cipitation show less than was measured in 1972, but the month of \*\*  
\*\* March is still an accumulation month and if snow and rain con- \*\*  
\*\* tinue in the above normal manner, the flows of 1972 could be \*\*  
\*\* reached or even exceeded. We will not know what to expect until \*\*  
\*\* our surveys of April 1 are made, at which time, historically, the \*\*  
\*\* maximum snow water equivalents in the upper watersheds are \*\*  
\*\* measured. If normal conditions prevail between now and that time, \*\*  
\*\* as well as on into the melt season, then high water can be \*\*  
\*\* expected, but not as great as was experienced two years ago. The \*\*  
\*\* snow cover, as of March 1, was generally less than occurred in \*\*  
\*\* 1972 and this is a plus point in our favor toward forecasting \*\*  
\*\* less flows than occurred at that time. There has been an \*\*  
\*\* increase, percentagewise, from that which was measured last \*\*  
\*\* month, which leads us to believe that the watersheds are in a \*\*  
\*\* wettening cycle. Currently, the snow packs range from 20% above \*\*  
\*\* normal to a high of 119% above. Precipitation during the month \*\*  
\*\* was above normal in all drainage divisions, as reported by the \*\*  
\*\* National Weather Service, with the exception of Central Division, \*\*  
\*\* composed of Yakima, Wenatchee and Chelan Drainages. Reservoir \*\*  
\*\* storage is below normal, except for Rimrock Lake, i.e., Tieton \*\*  
\*\* Reservoir, but this has little meaning, as reservoir managers \*\*  
\*\* will be lowering their pool levels in anticipation of the spring \*\*  
\*\* runoff. Flows during the month were generally well above normal, \*\*  
\*\* with only the Wenatchee, on the east side, reporting below normal \*\*  
\*\* runoff and the Green and Skagit on the west side. \*\*  
\*\*\*\*\*  
\*\*\*\*\*

### SNOW COVER

The greatest snow cover, percentagewise, was measured in the Cedar River Drainage, which had a snow pack 448% greater than was measured last year at this time, 119% greater than normal and still 6% less than was measured in 1972. The Walla Walla watershed, measured by three snow courses in Washington and one in Oregon, indicate the snow cover to be 323% greater than last year, 7% greater than 1972 and 94% greater than average. There is no regional trend to the high snow covers except that it appears that west of the Cascades the situation is better than along the north boundary of the state. There are pockets of low snow, such as the Ahtanum Creeks in the Yakima watershed.





## RESERVOIRS

Franklin D. Roosevelt Lake is being drawn down for the removal of the coffer dam in front of the third power house. As of March 1, storage in F. D. R. Lake was 1,175,400 acre-feet below the normal operating low elevation. Upon removal of this coffer dam, the reservoir will fill and undoubtedly spill with the subsequent spring runoff. In the Okanogan Drainage, Salmon Lake has near normal amount of water in storage, but Conconully Reservoir is still 45% less than normal and 50% below capacity. The reservoirs, both power and irrigation, will comfortably fill with the spring runoff and in all probability, uncontrolled spillage will occur. Only proper management will keep this uncontrolled spilling to a minimum.

## PRECIPITATION

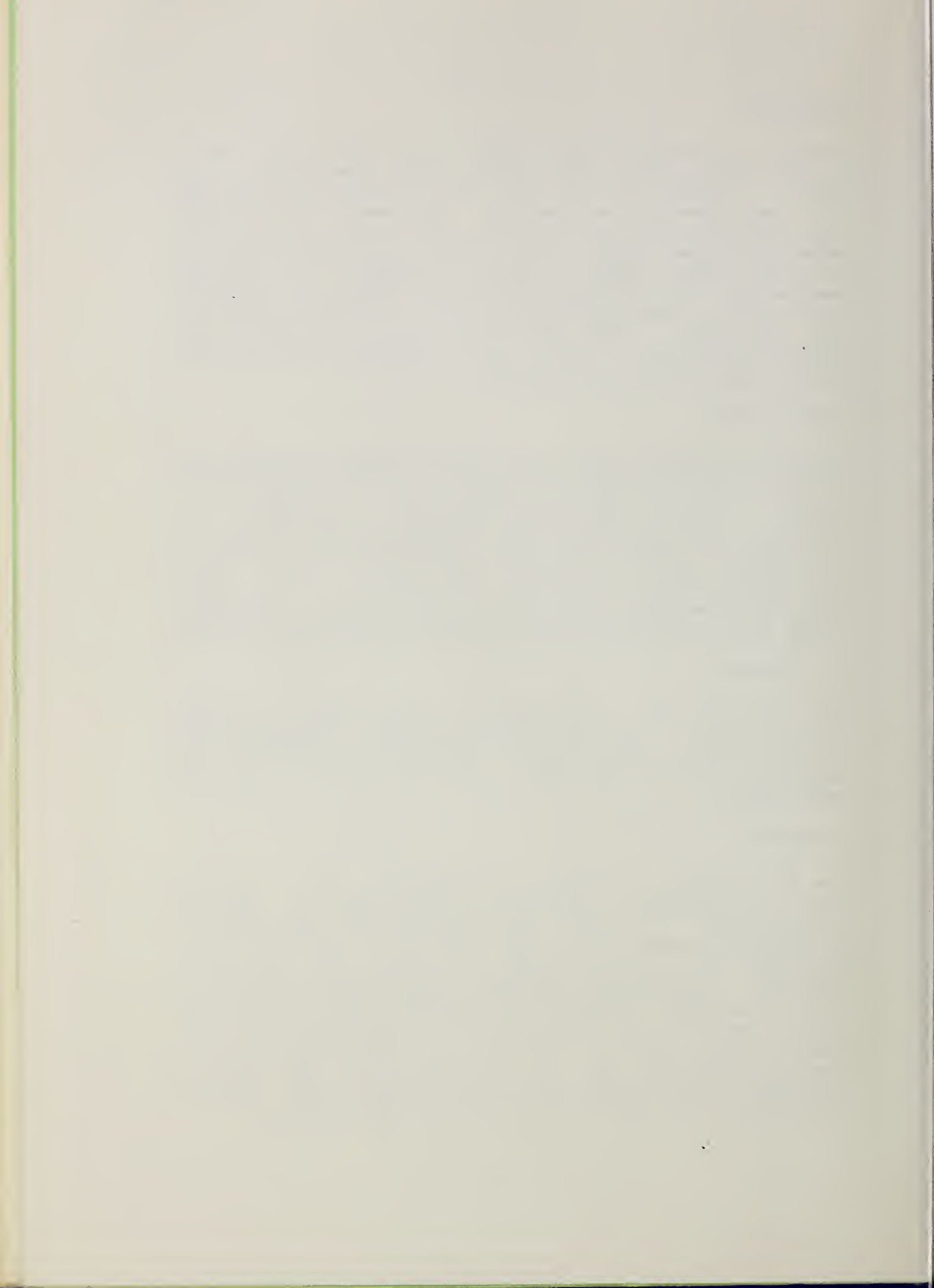
The continued above normal precipitation regime was experienced on all drainage divisions in Washington with the exception of the Central Division. This was reported by the National Weather Service. There has been a slight decrease, percentagewise, from that which was reported last month. During February, rainfall in the Columbia portion in Canada was 11% above normal - on the Pend Oreille-Spokane Drainage, 37% above. Northeastern Washington experienced a 26% above normal rainfall. The northwest slopes of the Cascades also had a 26% above normal precipitation.

## SOIL MOISTURE

There has been very little change in the wettness of the soil mantle reported at the soil moisture stations in Washington and tributary basins. Melting has not occurred to penetrate the snow pack and infiltrate the soil, so the conditions of last month still stand.

## STREAMFLOW

The Kettle River, as measured near Laurier, had the greatest flow, percentagewise, during the month of February. This was 213% of normal. The lowest flow occurred on the Green River, as measured below Howard Hansen Dam, and this was 16% below normal. Most river flows were in the 20% to 30% above normal category for the month. Forecasts of streamflow range from 11% above normal for the Birchbank station of the Columbia River to 50% above normal expected at the Yakima River, as measured near Parker. These forecasts have been increased 5% to 20% of that which was reported last month, but still only the Kettle River system is forecasted to have greater flows than occurred in 1972. Numerical forecasts can be found following this narrative statement.



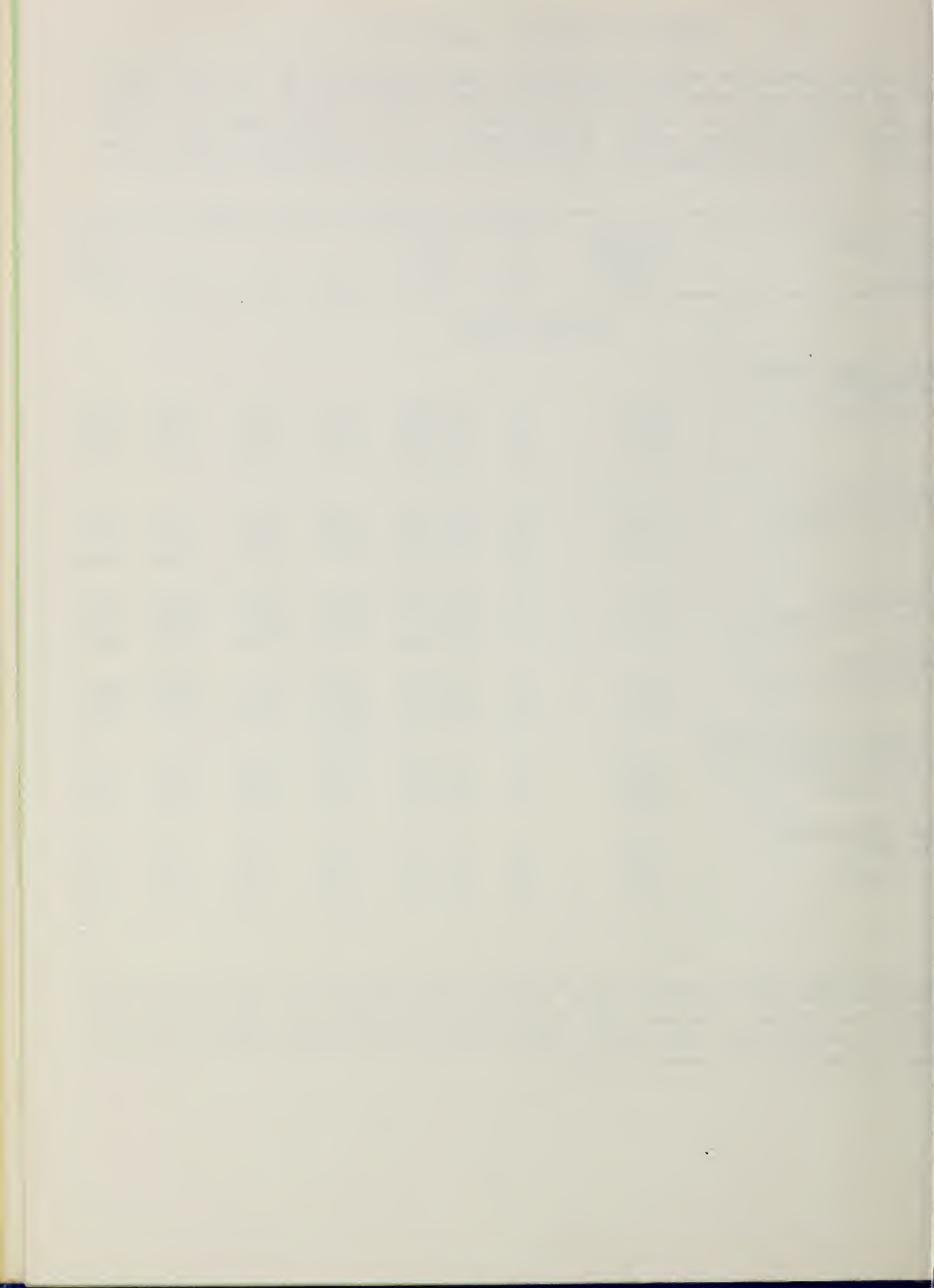


# STREAMFLOW FORECASTS - MARCH 1974

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1973 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1974	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1973	1972	1971	15-Yr Average 58-72
<u>COLUMBIA BASIN</u>							
<u>Columbia River System</u>							
<u>Columbia River</u>							
at Birchbank <u>1/</u>	51470	111	Apr-Sep	34814	56151	48708	46430
	40610	108	Apr-Jul	27879	46161	39465	37548
	29750	108	Apr-Jun	20258	33937	29725	27549
<u>Columbia River</u>							
at Grand Coulee <u>1/</u>	81250	118	Apr-Sep	45834	83837	77859	68868
	67700	116	Apr-Jul	38140	71776	66456	58379
	53400	116	Apr-Jun	29814	56220	53058	46060
<u>Columbia River</u>							
bl Rock Island Dam <u>1/</u>	89700	119	Apr-Sep	49262	97664	84668	75337
	75750	118	Apr-Jul	41312	84253	72806	64192
	59210	117	Apr-Jun	32102	65862	58253	50604
<u>Columbia River</u>							
at The Dalles, Or <u>1/</u>	127400	122	Apr-Sep	65012	134714	126868	104670
	107900	120	Apr-Jul	54150	117896	111065	89893
	87060	119	Apr-Jun	43211	96374	91721	73158
<u>PEND OREILLE RIVER SYSTEM</u>							
<u>Pend Oreille River</u>							
bl. Box Canyon	19500	122	Apr-Sep	7929	20294	19052	15953
	18000	123	Apr-Jul	7338	18724	17763	14688
	15600	122	Apr-Jun	6507	16109	15357	12777
<u>KETTLE RIVER SYSTEM</u>							
<u>Kettle River</u>							
nr. Laurier	2430	130	Apr-Sep	1106	2289	2240	1873
	2310	129	Apr-Jul	1079	2205	2177	1793
	2100	128	Apr-Jun	1010	1965	1927	1640

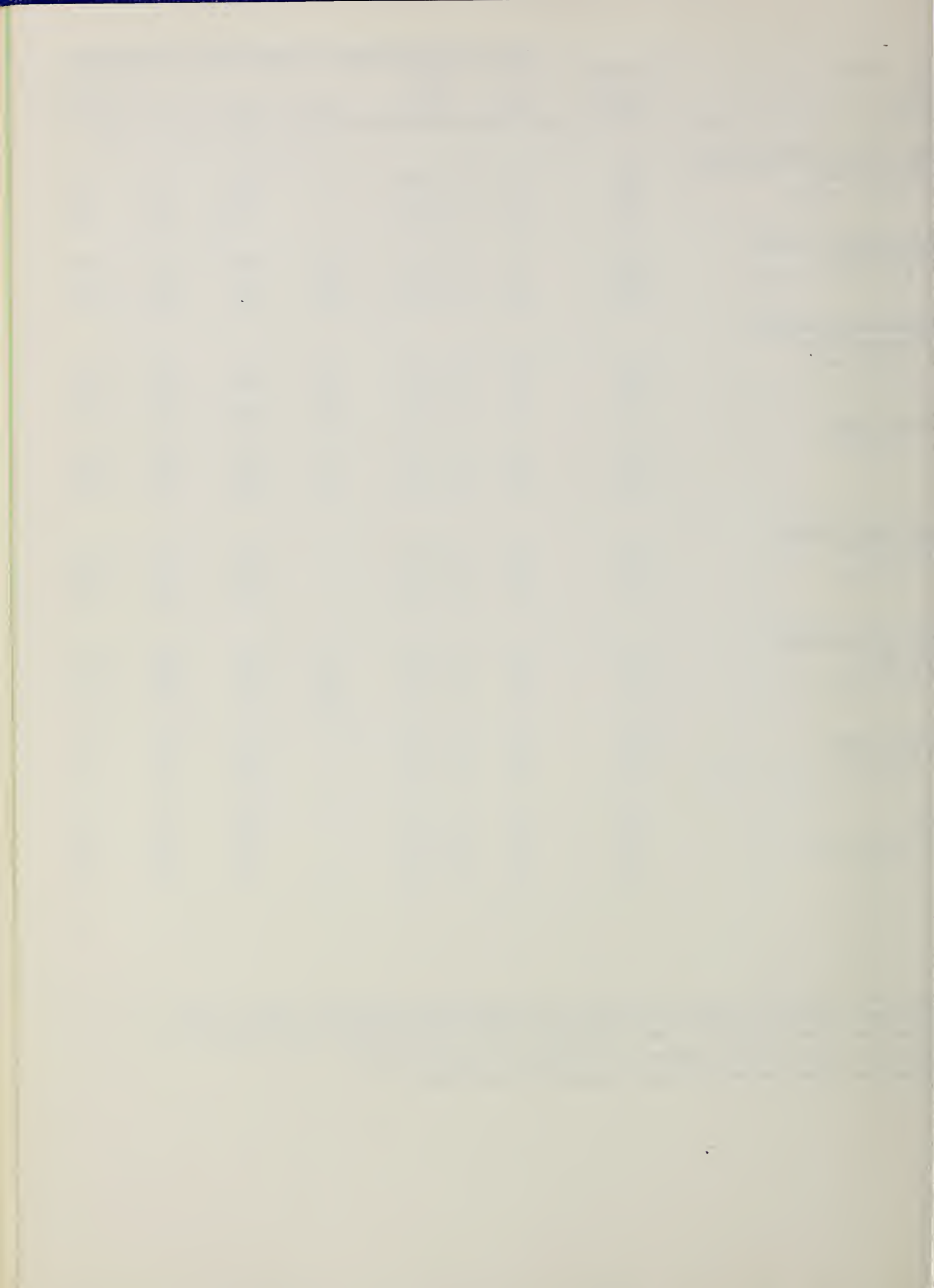
1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.



Basin, Stream and Station	Forecast Runoff 1974	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1973	1972	1971	15-Yr Average 58-72
<u>Kettle River System (Cont.)</u>							
Colville River	205	139	Apr-Sep	-	114	170	148
at Kettle Falls	190	139	Apr-Jul	-	103	158	137
	175	137	Apr-Jun	-	94	146	128
<u>Spokane River System*</u>							
Spokane River	4300	144	Apr-Sep	1121	4000	3941	2983
at Post Falls ID <u>2/</u>	4200	145	Apr-Jul	1074	3874	3798	2899
	4020	145	Apr-Jun	1011	3644	3523	2773
<u>Okanogan River System</u>							
Similkameen River							
nr. Nighthawk	2170	143	Apr-Sep	719	3259	1931	1517
	2000	141	Apr-Jul	675	3090	1840	1424
	1770	145	Apr-Jun	600	2568	1576	1222
Okanogan River							
nr. Tonasket	2570	149	Apr-Sep	779	3852	2225	1723
	2340	148	Apr-Jul	719	3523	2077	1582
	2020	150	Apr-Jun	639	2895	1772	1349
<u>Methow River System</u>							
Methow River	1460	142	Apr-Sep	-	1959	1339	1031
nr. Pateros	1350	140	Apr-Jul	-	1819	1259	963
	1170	141	Apr-Jun	-	1524	1061	832
<u>Chelan River System</u>							
Chelan River	1630	130	Apr-Sep	771	1865	1550	1253
at Chelan <u>3/</u>	1430	129	Apr-Jul	674	1619	1352	1112
	1145	130	Apr-Jun	540	1250	1019	881
Stehekin River	1180	131	Apr-Sep	-	1235	1093	904
at Stehekin	1010	130	Apr-Jul	-	1044	927	776
	785	131	Apr-Jun	-	772	657	600
Entiat	320	134	Apr-Sep	-	398	310	239
nr. Ardenvoir	295	134	Apr-Jul	-	361	280	220
	240	133	Apr-Jun	-	283	209	180

- \* Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho
- 2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.
- 3/ Observed flow corrected for storage in Lake Chelan.





Basin, Stream and Station	Forecast Runoff 1974	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-Yr			
		15-Yr. Avg.	cast period	1973	1972	1971	Average 58-72
<u>Wenatchee River System</u>							
Wenatchee River at Plain	1830	139	Apr-Sep	-	1926	1637	1312
	1650	139	Apr-Jul	-	1686	1448	1187
	1270	133	Apr-Jun	-	1272	1045	956
Wenatchee River at Peshastin	2460	138	Apr-Sep	1055	2787	2241	1786
	2260	139	Apr-Jul	964	2464	1999	1629
	1840	139	Apr-Jun	823	1883	1454	1324
Stemilt Basin nr Wenatchee	145	105	May-Sep	-	145*	148*	138*
<u>Yakima River System</u>							
Yakima River nr. Martin <u>4/</u>	180	127	Apr-Sep	85	220	191	142
	165	126	Apr-Jul	78	198	179	131
	145	125	Apr-Jun	72	167	139	116
Yakima River at Cle Elum <u>5/</u>	1250	130	Apr-Sep	-	1515	1305	965
	1140	130	Apr-Jul	-	1374	1178	877
	1000	131	Apr-Jun	-	1156	936	764
Yakima River nr. Parker <u>6/</u>	2600	150	Apr-Sep	-	3231	2401	1730
	2550	150	Apr-Jul	-	3071	2327	1701
	2370	150	Apr-Jun	-	2694	1961	1580
Kachess River nr. Easton <u>7/</u>	165	132	Apr-Sep	67	195	172	125
	155	131	Apr-Jul	63	182	163	118
	140	132	Apr-Jun	59	153	131	106
Cle Elum River nr Roslyn <u>8/</u>	650	136	Apr-Sep	280	747	624	477
	600	137	Apr-Jul	254	671	565	437
	490	132	Apr-Jun	220	537	432	372

\* Thousands of Miners' Inches.

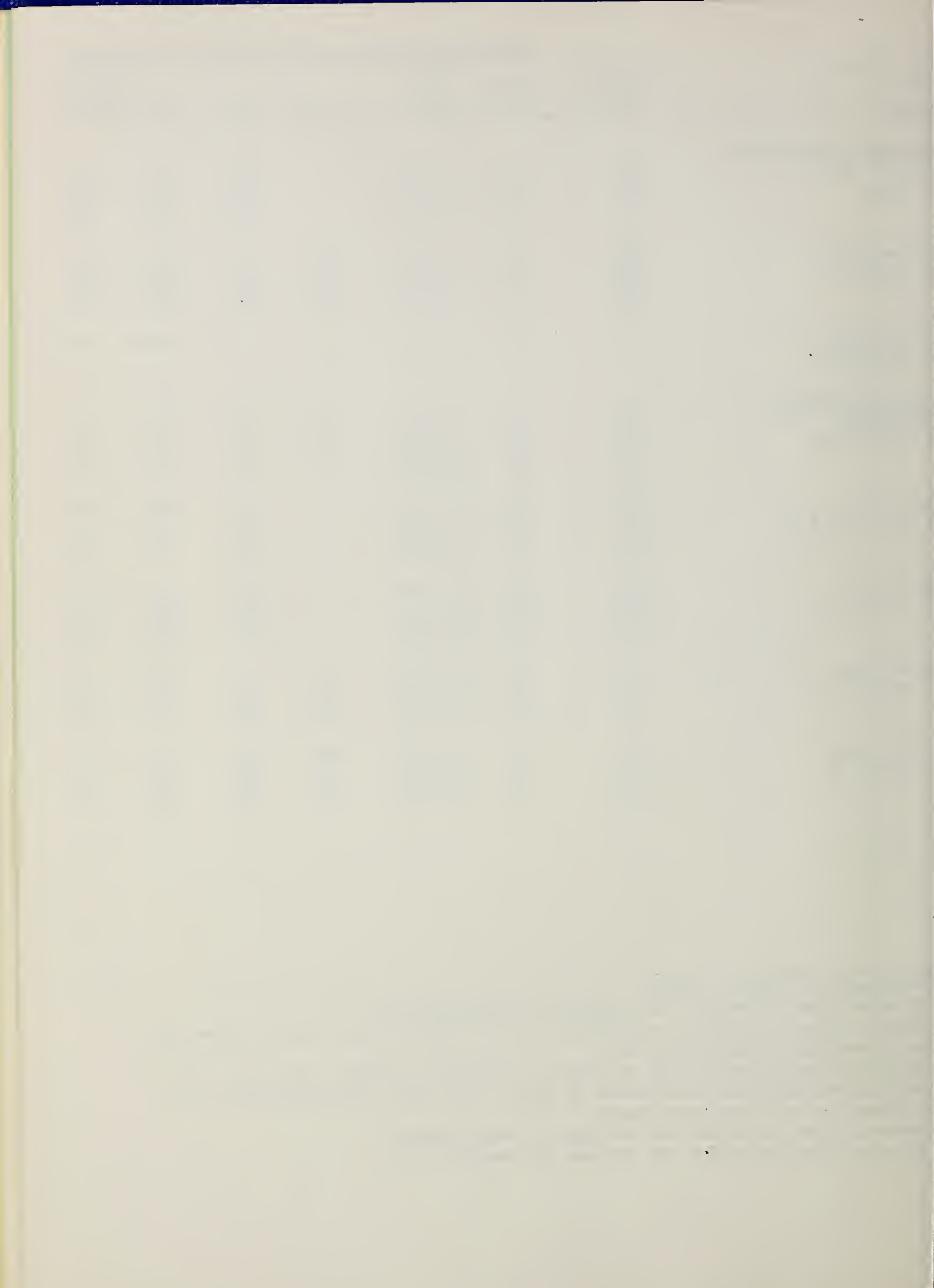
4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.





Basin, Stream and Station	Forecast Runoff 1974	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-Yr			
		15-Yr. Avg.	cast period	1973	1972	1971	15-Yr Average 58-72
<u>Yakima River System (Cont.)</u>							
Bumping River	205	140	Apr-Sep	73	228	193	146
nr. Nile <u>9/</u>	190	142	Apr-Jul	66	203	174	134
	160	143	Apr-Jun	59	155	125	112
American River	175	137	Apr-Sep	-	186	172	128
nr. Nile	160	136	Apr-Jul	-	169	154	118
	136	136	Apr-Jun	-	137	113	100
Tieton River	345	140	Apr-Sep	161	407	325	247
at Tieton Dam <u>10/</u>	295	140	Apr-Jul	128	342	271	211
	240	140	Apr-Jun	102	267	199	172
Naches River	1245	140	Apr-Sep	-	1477	1168	889
nr. Naches <u>11/</u>	1135	140	Apr-Jul	-	1339	1055	810
	975	140	Apr-Jun	-	1106	833	698
Ahtanum Creek	63	131	Apr-Sep	-	75	63	48
nr. Tampico <u>12/</u>	58	132	Apr-Jul	-	69	57	44
	53	136	Apr-Jun	-	59	48	39
<u>Lower Columbia River System</u>							
Mill Creek							
nr. Walla Walla	40	148	Apr-Sep	-	34	30	27
	35	146	Apr-Jul	-	29	26	24
	30	143	Apr-Jun	-	26	24	21
Lewis River	1740	130	Apr-Sep	773	1597	1827	1342
at Ariel <u>13/</u>	1525	130	Apr-Jul	642	1392	1605	1174
	1390	132	Apr-Jun	556	1236	1341	1052
Cowlitz River	2700	128	Apr-Sep	-	3048	2800	2106
Blw. Mayfield Dam	2400	130	Apr-Jul	-	2672	2463	1846
	2000	127	Apr-Jun	-	2201	1935	1578
Cowlitz River	3550	128	Apr-Sep	1561	3819	3710	2768
at Castle Rock <u>14/</u>	3150	130	Apr-Jul	1344	3331	3253	2416
	2650	127	Apr-Jun	1168	2782	2585	2083

9/ Observed flow corrected for storage in Bumping Lake.

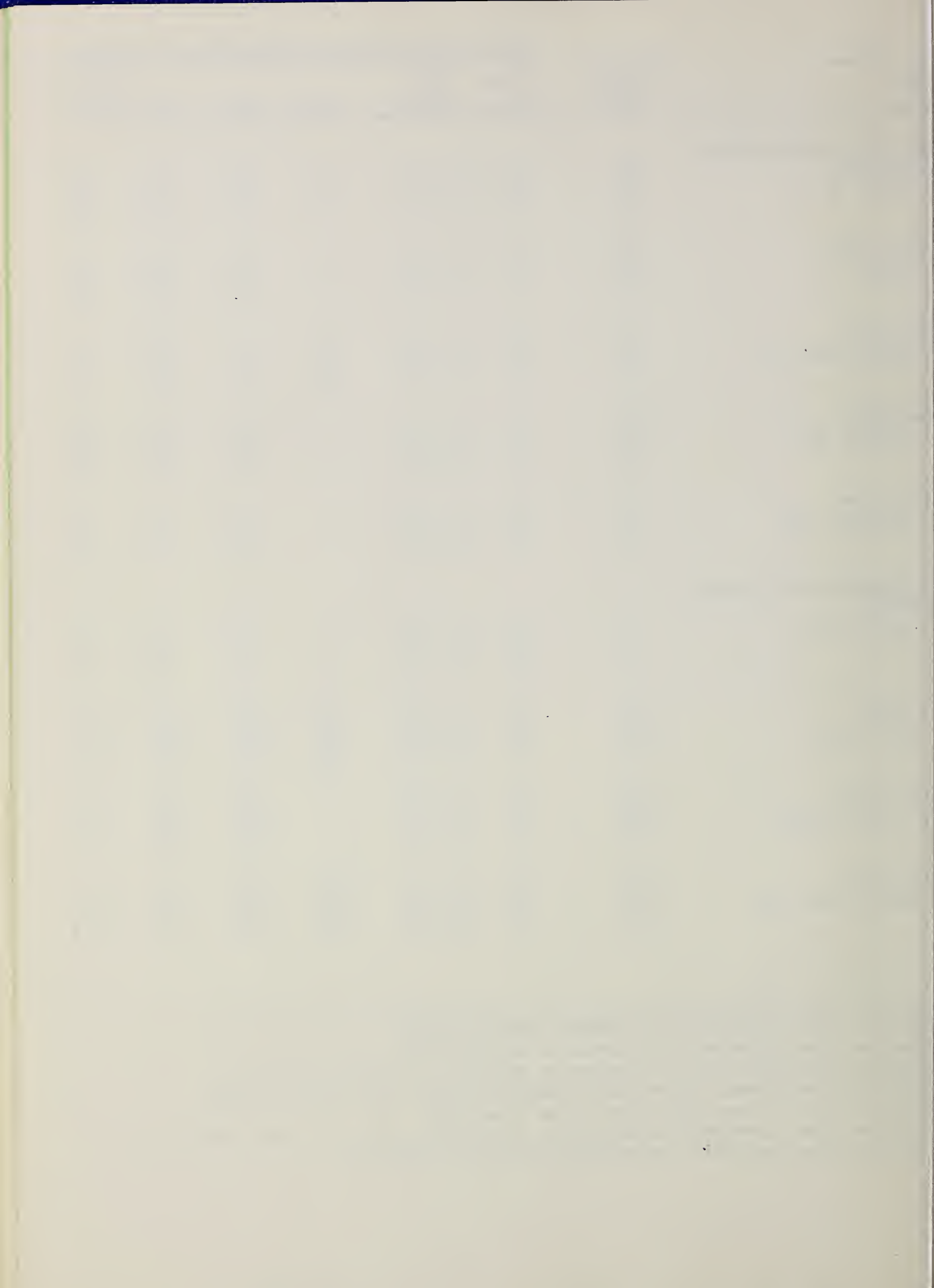
10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.

12/ Observed flow of North and South Forks (combined)

13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.

14/ Observed flow corrected for storage in Mayfield Reservoir.



Basin, Stream and Station	Forecast Runoff 1974	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-Yr.			
		15-Yr. Avg.	cast period	1973	1972	1971	Average 58-72

PUGET SOUND

Skagit River System

Skagit River at Newhalem <u>15/</u>	2830	116	Mar-Aug	-	3800	2903	2418
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OLYMPIC PENINSULA

Dungeness River System

Dungeness River	185	112	Apr-Sep	-	207	196	165
nr. Sequim	155	113	Apr-Jul	-	171	154	137
	116	112	Apr-Jun	-	127	105	104

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15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.





# COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about March 1, 1974 as percent of the same date in 1973 and 1972 and average of record

Tributary Basin	No. of Courses Average	1974 Snow Water Expressed as percent of		
		1973	1972	1958-72 Avg.

## UPPER COLUMBIA BASIN

Pend Oreille	15	258	102	132
Kettle	17	180	103	123
Colville	4	198	128	126
Spokane	7	382	106	160
Okanogan	38	210	97	144
Methow	10	226	103	158
Chelan	7	186	93	145
Entiat	9	190	84	121
Wenatchee	11	287	80	142
Yakima	25	309	83	159
Ahtanum	2	214	72	120

## LOWER COLUMBIA

Mill Creek	4	423	107	194
Klickitat	1	-	87	157
White Salmon	2	312	81	144
Lewis	18	375	79	138
Cowlitz	10	396	78	143

## PUGET SOUND

Nisqually	4	239	78	161
White	2	226	84	146
Green	7	339	77	137
Cedar	6	548	94	219
Snoqualmie	2	276	76	134
Skykomish	3	357	102	170
Skagit	14	262	84	161
Nooksack	5	232	108	164

## OLYMPIC PENINSULA

Skokomish	4	250	110	164
Elwha	1	250	102	151



RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE <u>1/</u> CAPACITY	Measured (March)			
			1974	1973	1972	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	127.9	53.3	248.0	162.4
Columbia	Franklin D. Roosevelt Lake	5232.0	-1175.4	3729.1	2735.6	2843.8
Columbia	Banks Lake	761.8	720.3	613.3	714.9	588.3
Okanogan	Conconully Reservoir	13.0	6.4	11.6	9.6	11.6
Okanogan	Salmon Lake	10.5	7.3	9.5	8.6	7.4
Chelan	Lake Chelan	676.1	228.5	141.4	126.5	234.9
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	99.4	102.0	151.9	105.5
Kachess	Kachess Lake	239.0	107.9	195.0	179.0	183.6
Cle Elum	Lake Cle Elum	436.9	195.7	319.1	312.1	264.5
Bumping	Bumping Lake	33.7	4.7	9.1	9.2	10.2
Tieton	Rimrock Lake	198.0	132.1	153.3	139.6	128.2
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1202.0	1030.4	870.3	680.1	873.9
Skagit	Diablo Reservoir	90.6	86.4	89.0	83.8	85.0
Skagit	Gorge Reservoir	9.8	8.2	8.1	7.3	-

<sup>1/</sup> Based on Active Storage

\* 15-year Average 1958-72





# SOIL MOISTURE - MARCH

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content		
					Inches as of March 1		
					1974	1973	1972

## OKANOGAN

Salmon Meadows	19A2M	4500	48	5.4	3.7	2.3	3.6
Trout Creek	3-M	3600	48	7.3	3.8*	3.2*	4.3*

## YAKIMA

Domery Flat	21B20m	2200	48	6.9	4.9	5.2	-
Lake Cle Elum	21B14M	2200	48	12.8	9.3	9.2	-

## WALLA WALLA

Couse	17C3m	3650	48	11.1	10.3	7.6	10.8
Helmets	17C2M	4400	48	12.0	10.1	10.6	11.6

## WENATCHEE

Upper Wheeler	20B7M	4400	48	12.7	5.7	8.9	10.0
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\* February Readings

# FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content		
					Inches as of Oct. 1		
					1973	1972	1971

## OKANOGAN

Salmon Meadows	19A02M	4500	48	5.4	2.6	2.8	2.7
Trout Creek	3-M	3600	48	7.3	2.8	3.3	3.3

## YAKIMA

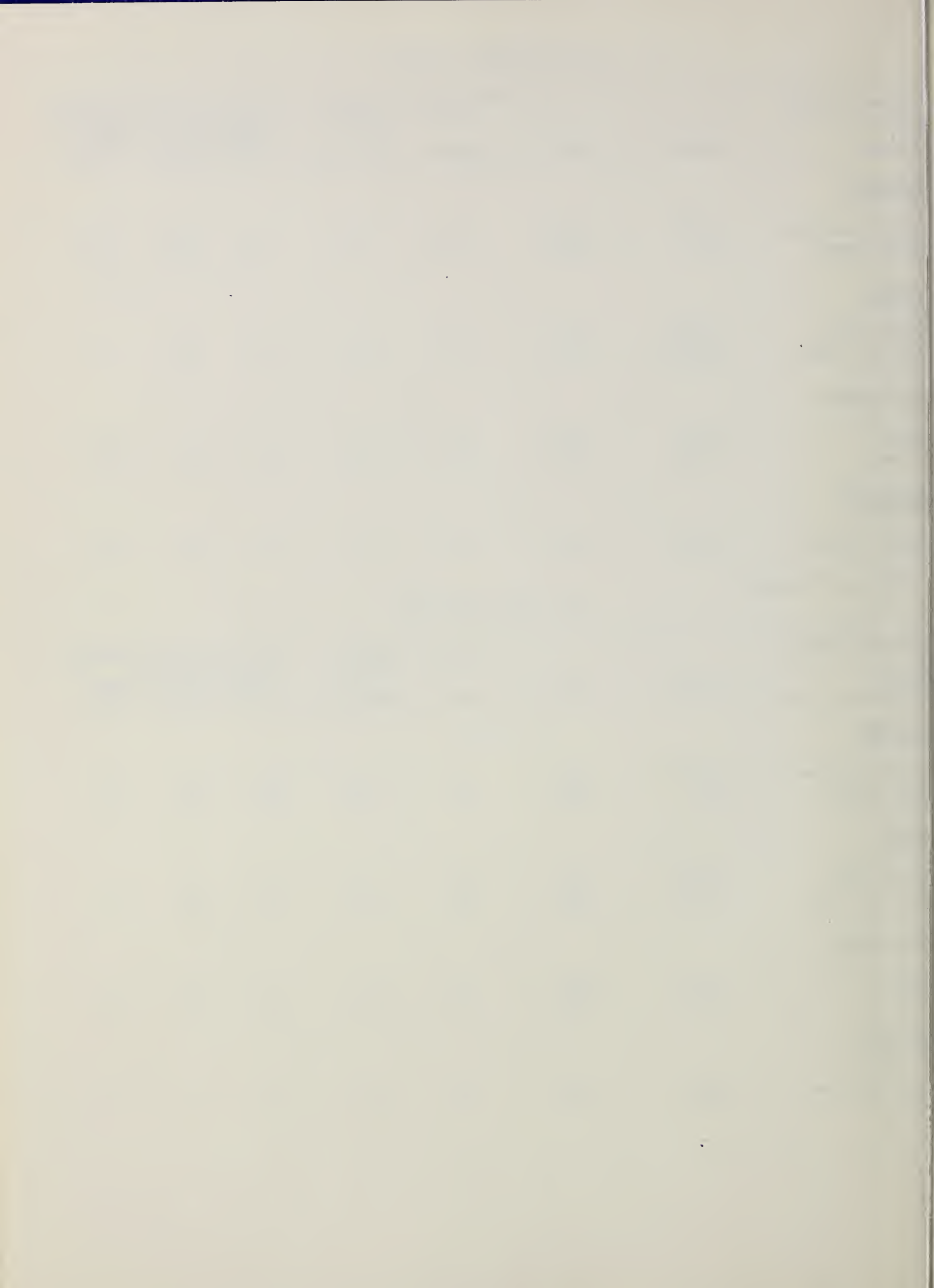
Domery Flat	21B20m	2200	48	6.9	2.6	4.1	2.1
Lake Cle Elum	21B14M	2200	48	12.8	6.1	8.7	7.1

## WALLA WALLA

Couse	17C3m	3650	48	11.1	5.6	6.0	6.2
Helmets	17C2M	4400	48	12.0	7.6	7.7	8.2

## WENATCHEE

Upper Wheeler	20B7M	4400	48	12.7	6.0	5.7	6.5
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PRECIPITATION 1/

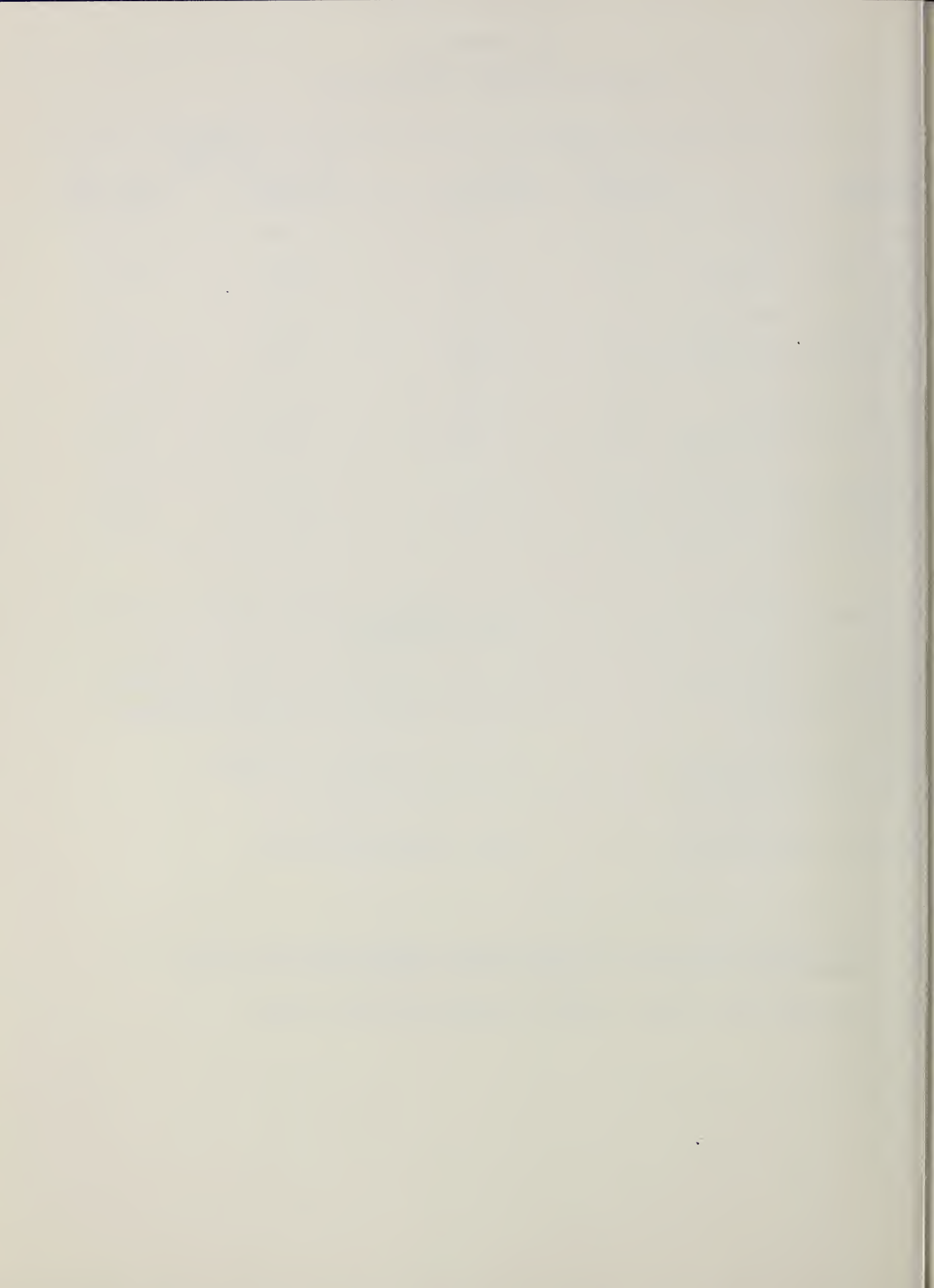
## Division Averages and Departures

Drainage Divisions	FALL		WINTER	
	Sept-Oct Average	1973 <u>2/</u> Departure	Nov. 1973 - Feb. 1974 Average	<u>2/</u> Departure
Columbia in Canada	5.14	+ 0.67	14.00	+ 2.79
Pend Oreille - Spokane	4.28	- 0.20	28.18	+12.17
Northeastern Washington	3.36	- 0.58	15.95	+ 6.39
Southeastern Washington	3.71	+ 0.48	19.00	+ 7.78
Central Washington	4.68	- 0.07	32.59	+ 8.39
North Central Washington	3.44	+ 1.82	8.39	+ 2.48
Northwest Slope Cascades	11.53	- 1.16	60.67	+16.26
Southwest Slope Cascades	9.69	+ 1.01	49.17	+13.69

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse Drainages.
Central Washington	- Yakima, Wenatchee and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service

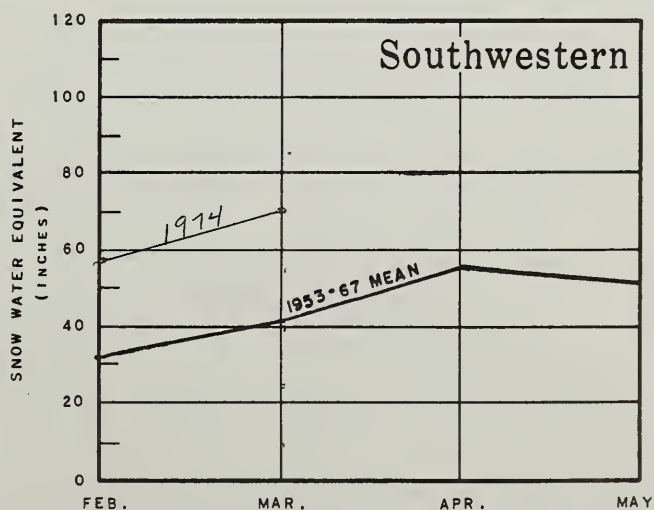
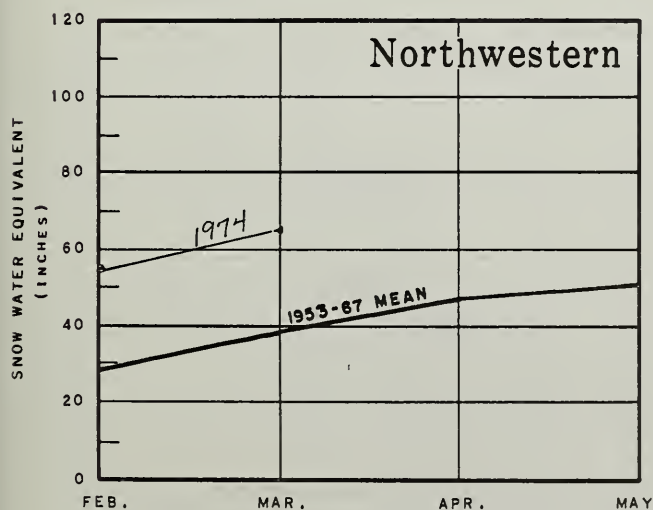
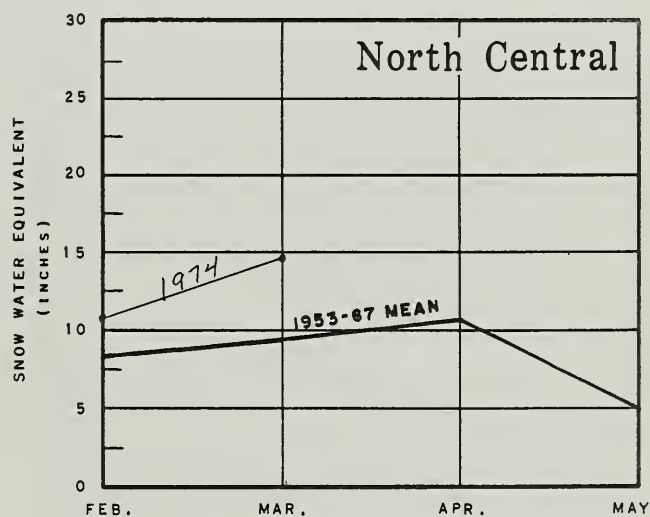
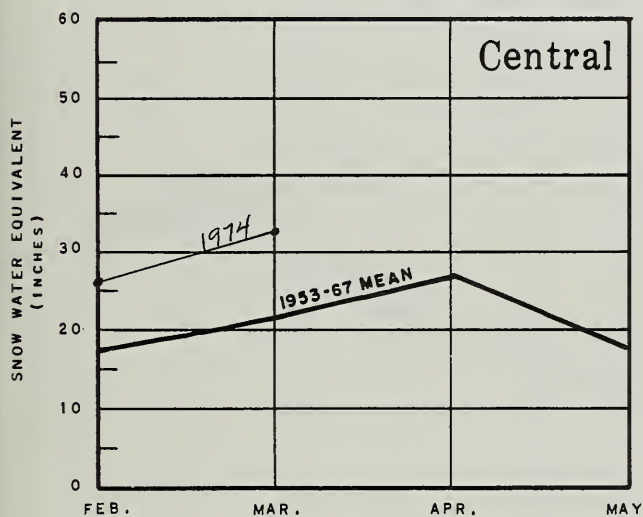
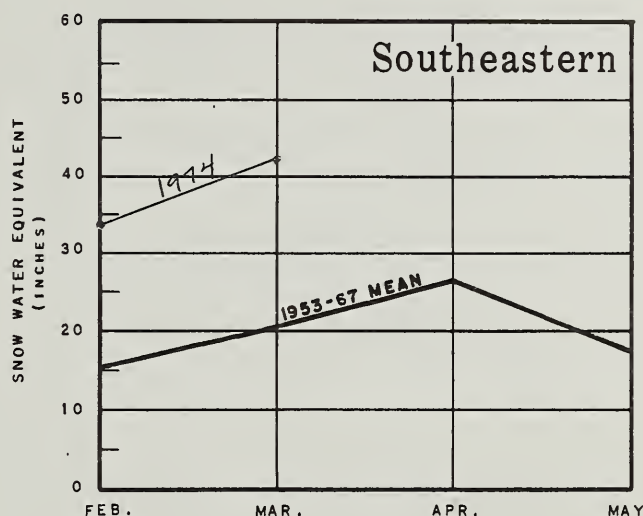
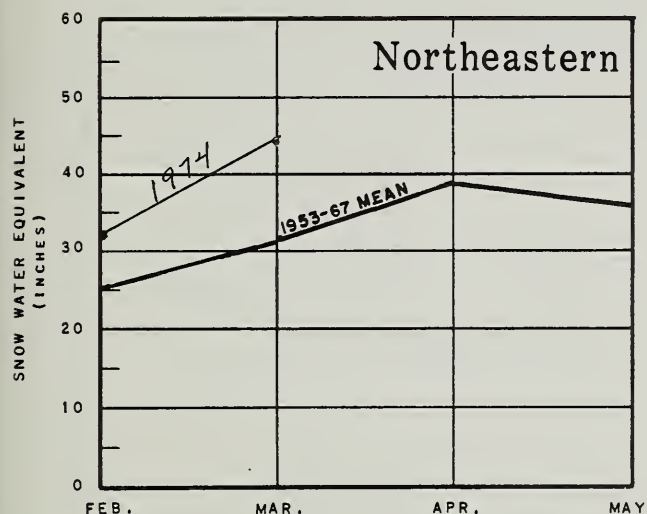
2/ - Departure from 15-year (1958-72) drainage division average.



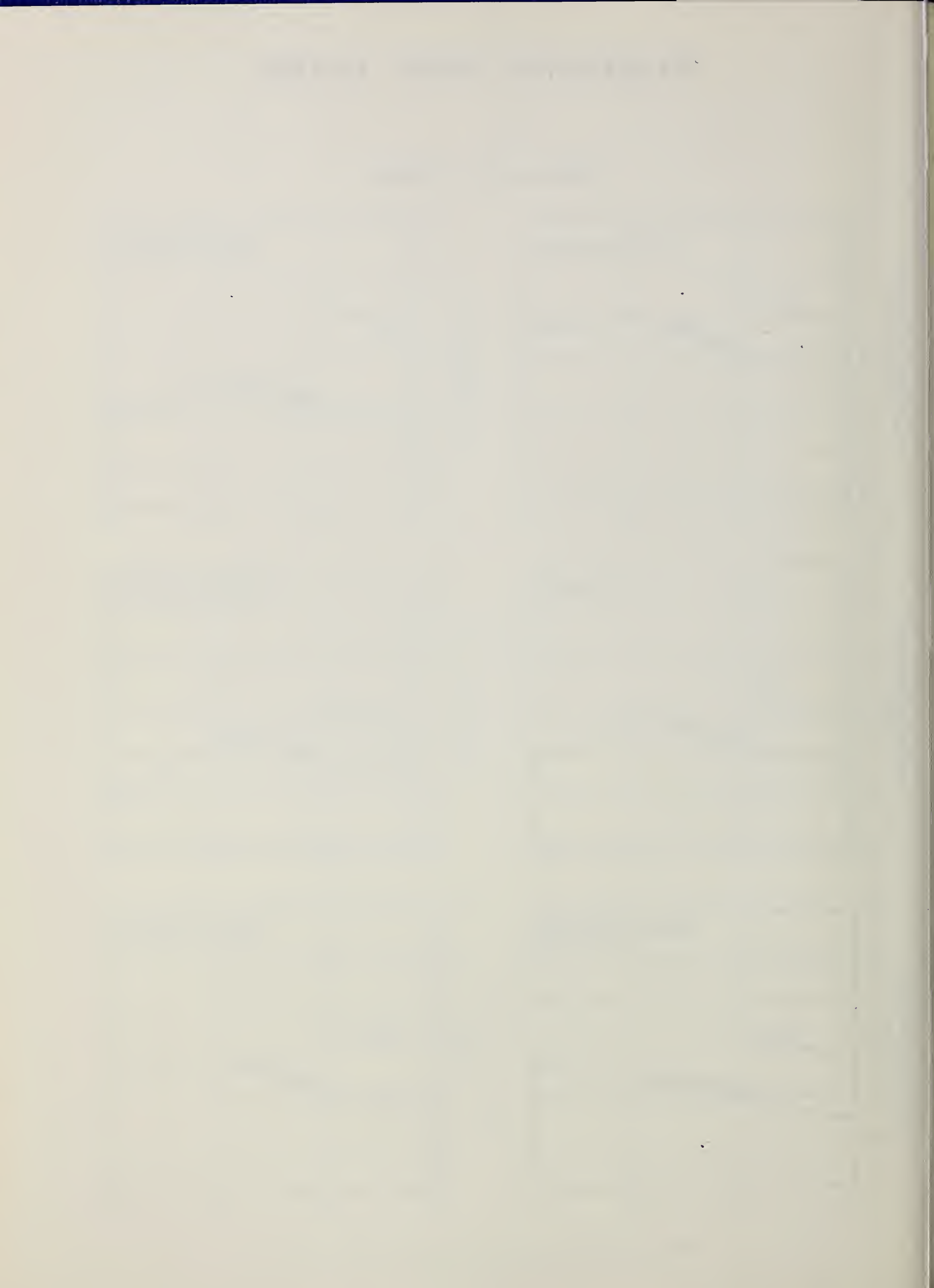
# WASHINGTON SNOW COVER

1974

## DRAINAGE AREAS



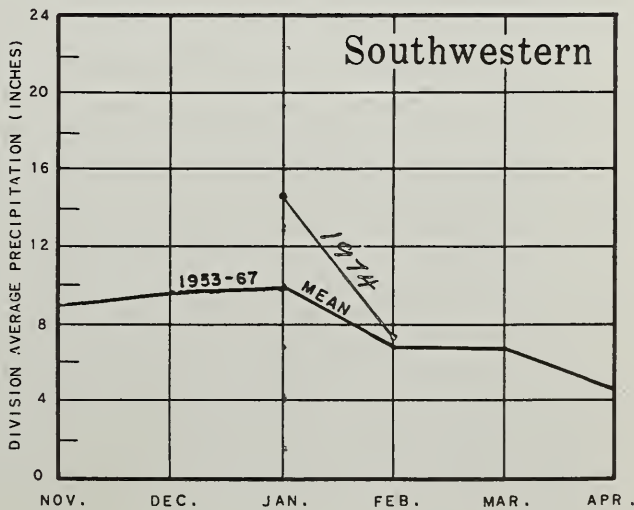
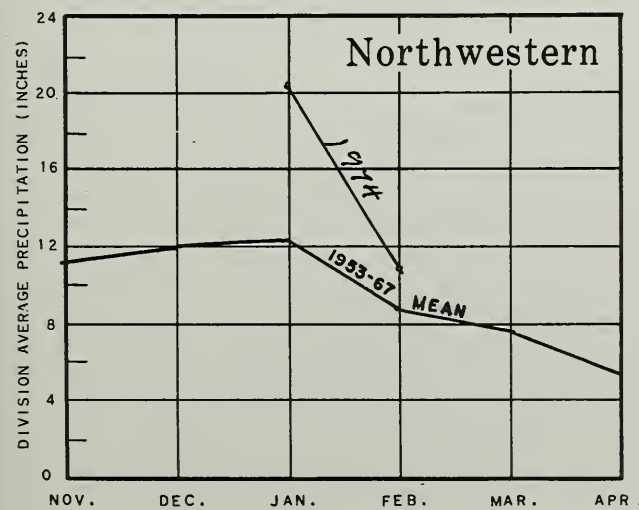
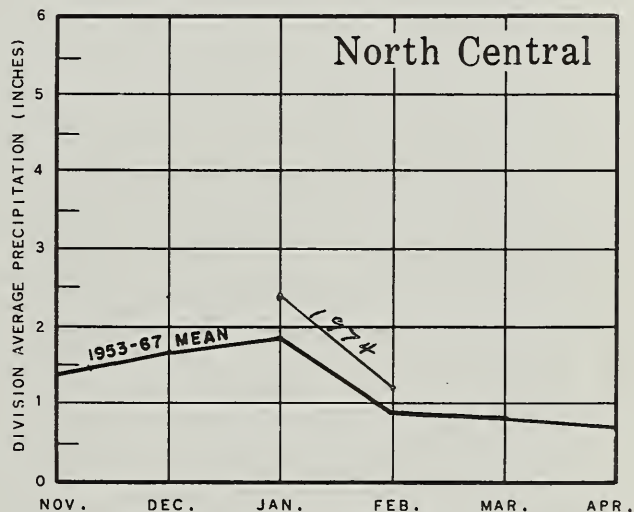
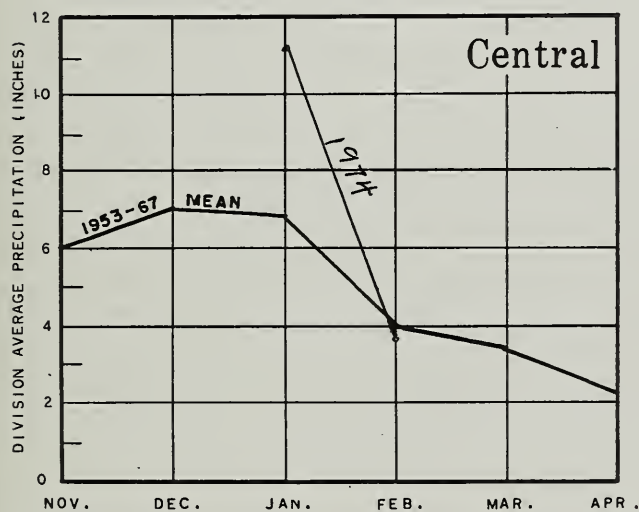
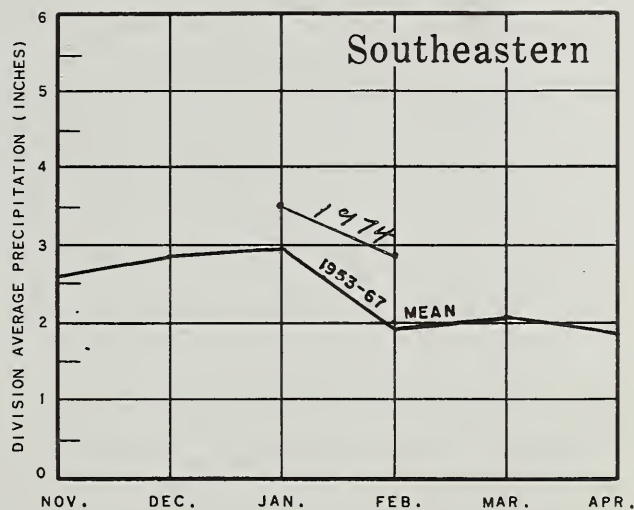
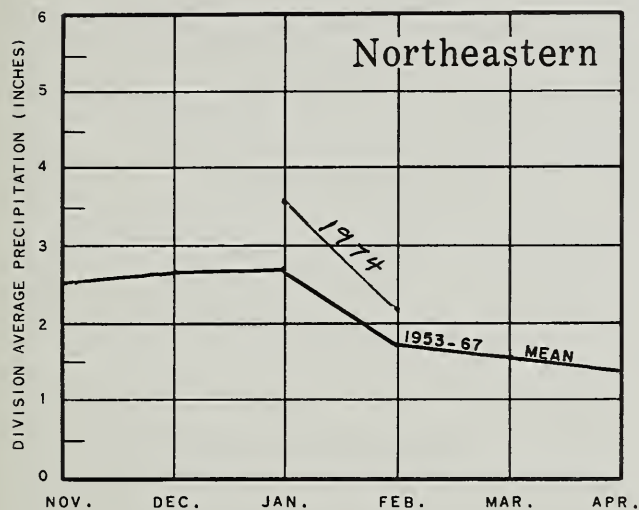


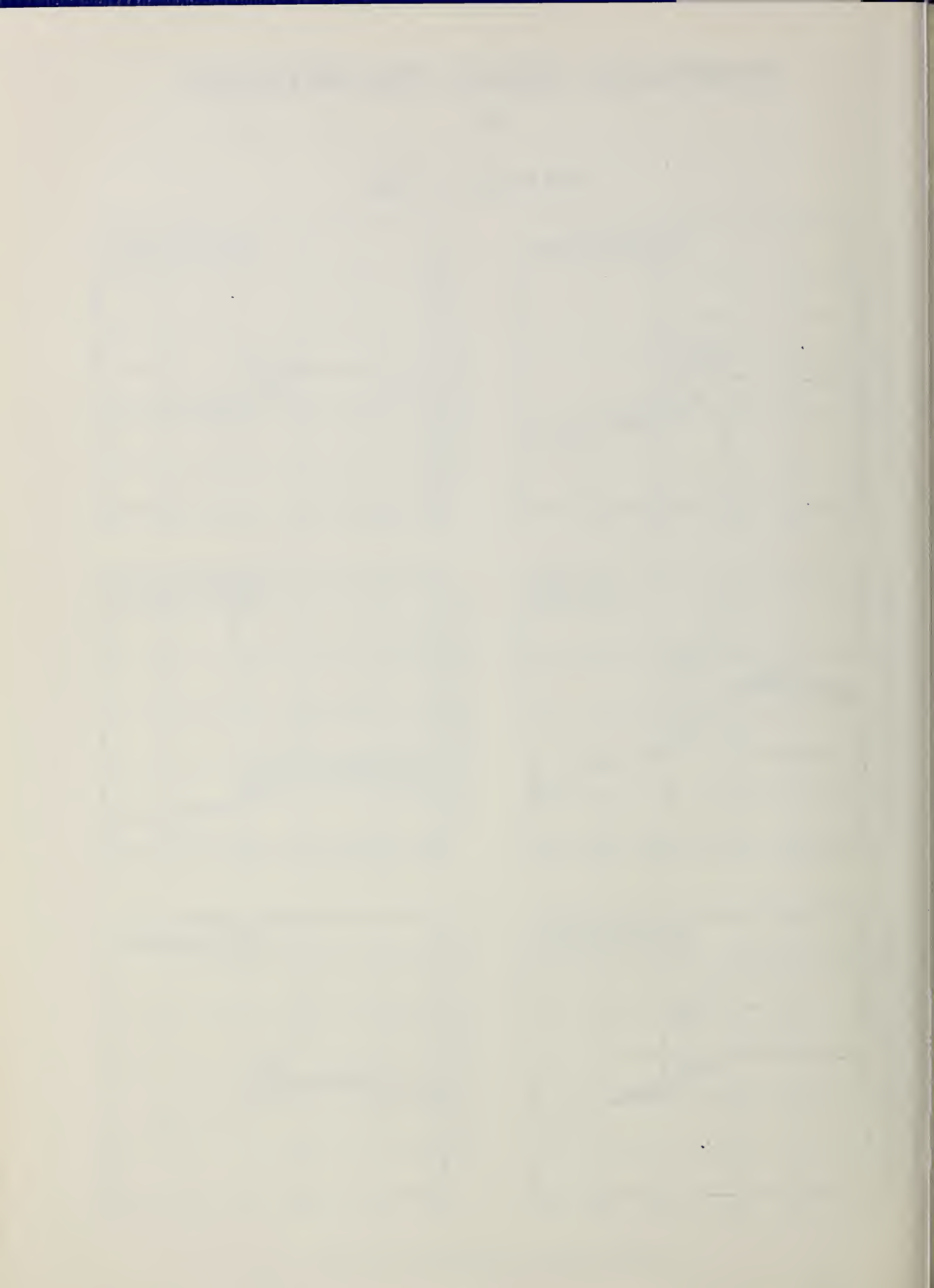


# WASHINGTON VALLEY PRECIPITATION

1974

## DRAINAGE AREAS







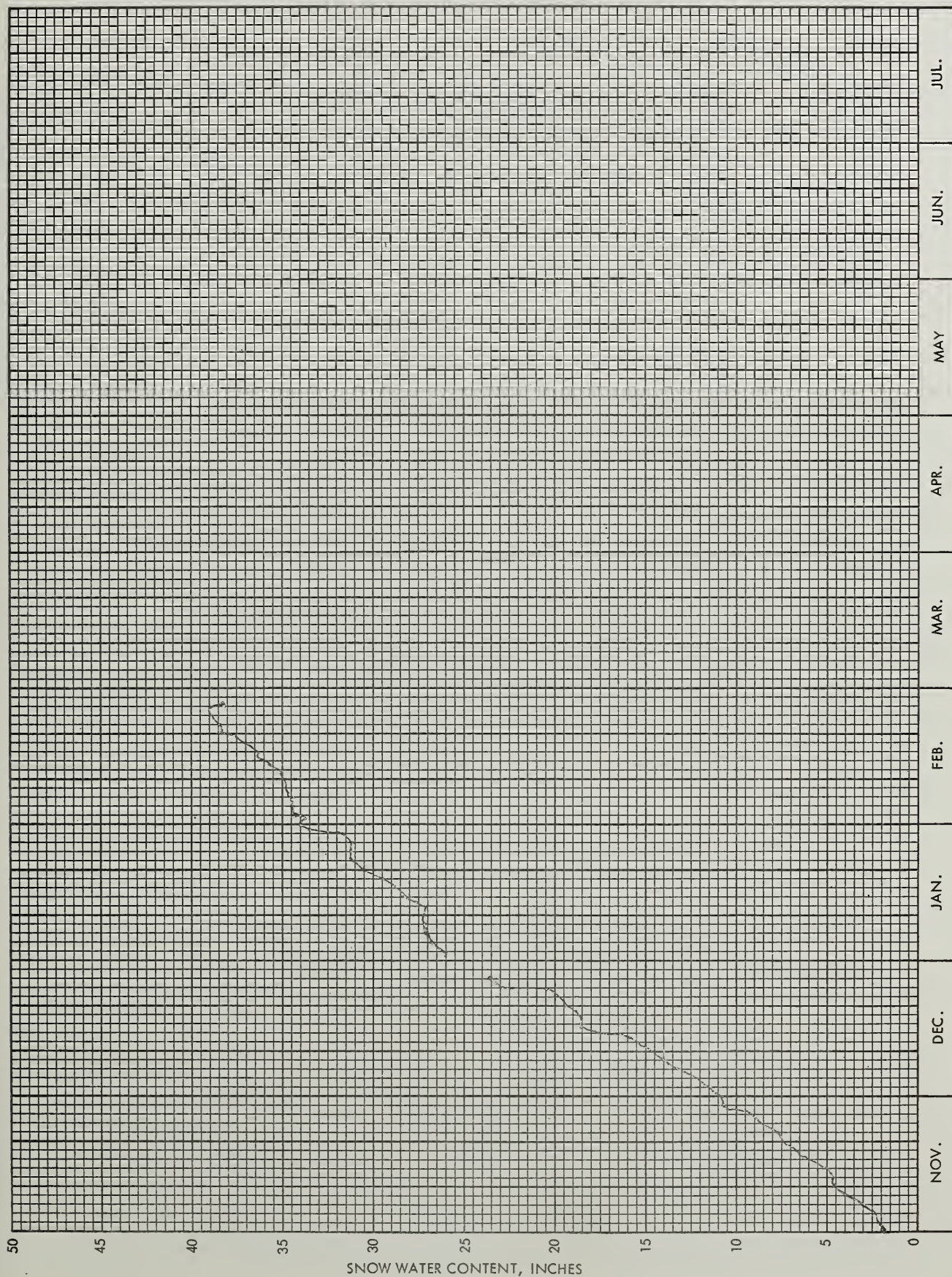
# SNOW PILLOW DATA

Berne-Mill Creek

1973-74

Sec. 13 T. 26N R. 14E No. 21B41SP Drainage: Wenatchee R.

Lat. 47° 45' Long. 121° 42' Elev. 3240



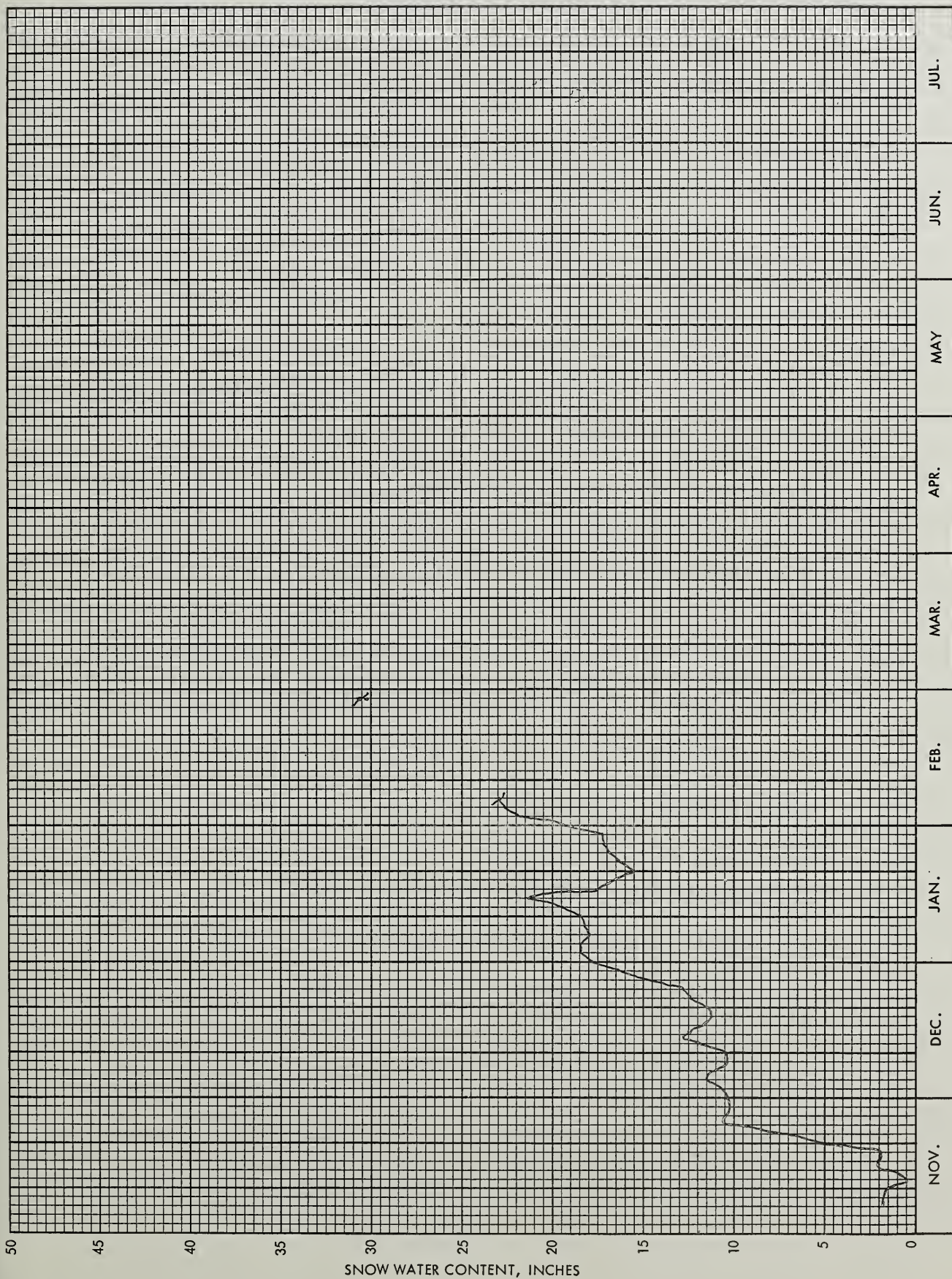




SNOW PILLOW DATA

AS OF MARCH 1, 1974

Sec. 21 T. 21N R. 9E No. 21B42SP Drainage: Green River  
 Lat. 47° 17' Long. 120° 40' Elev. 3200'



115-0-33038-C1-1

115-0-33038-C1-1

115-0-33038-C1-1



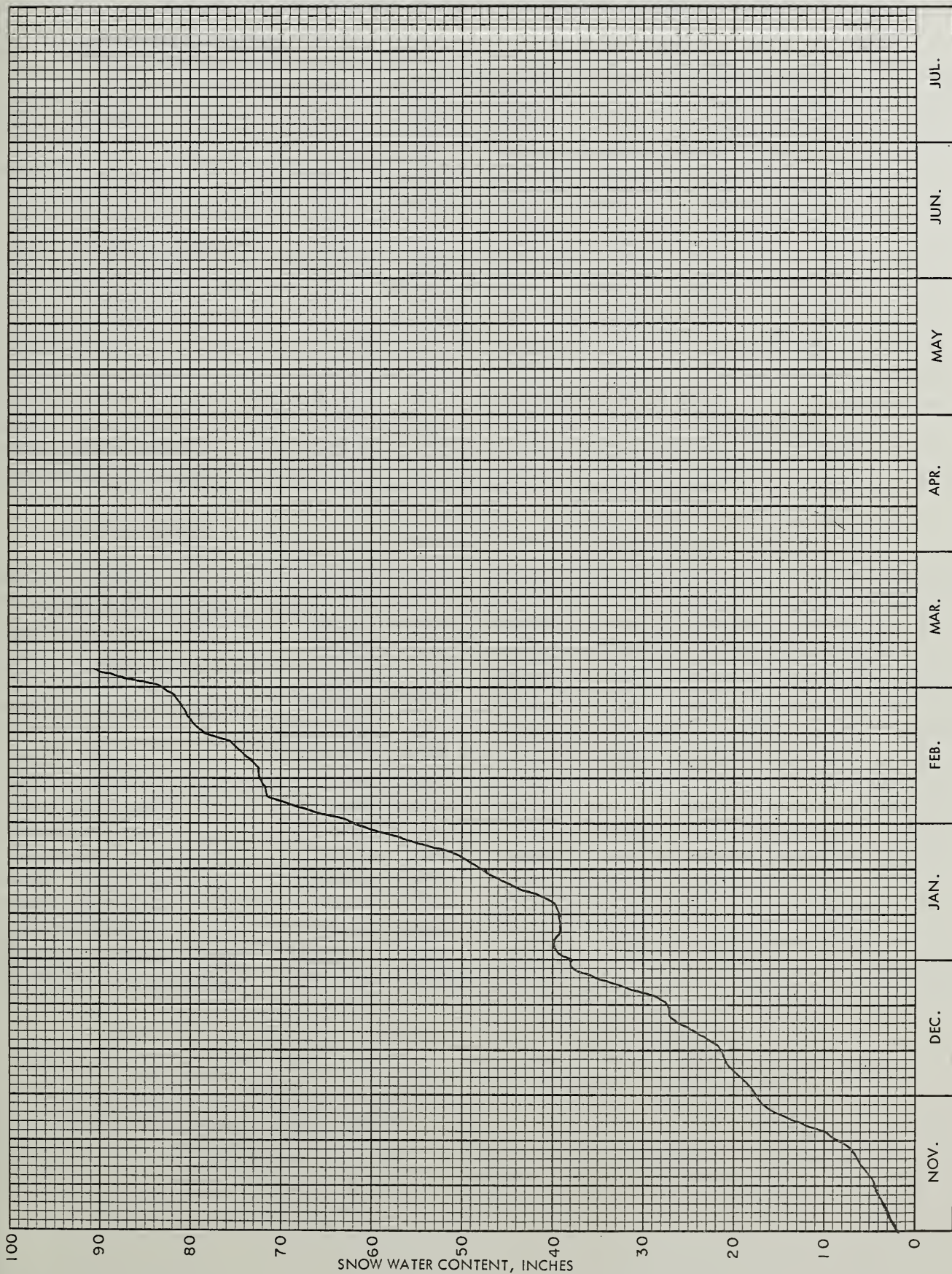
SNOWSHOE BUTTE - FS

SNOW PILLOW DATA

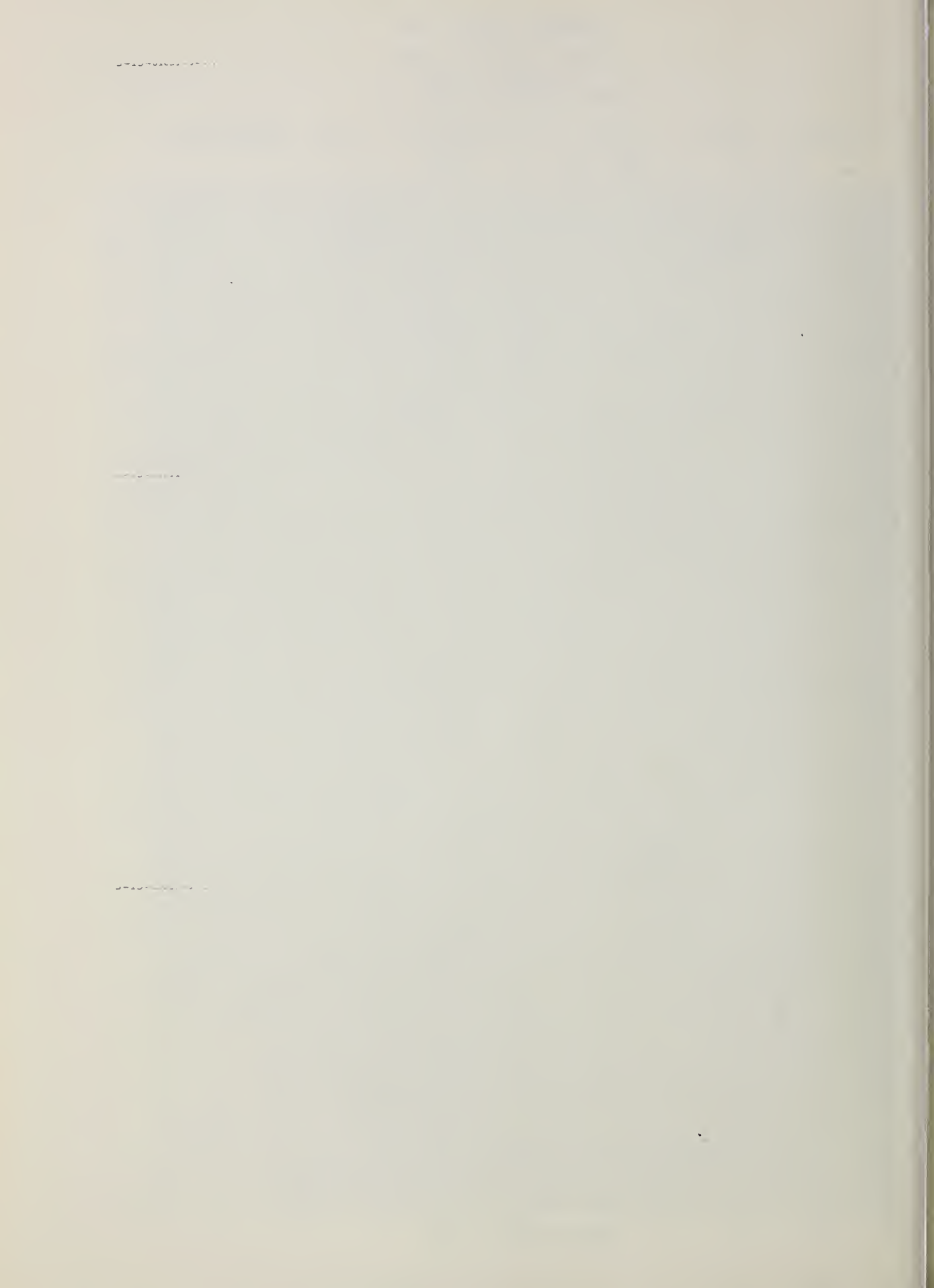
AS OF MARCH 1, 1974

Sec. 28 T. 21N R. 9E No. 21B43SP Drainage: Green River

Lat. 47° 13' Long. 121° 22' Elev. 5000'







## SNOW DATA TO MARCH 1, 1974 - APPENDIX 1

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #

## U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	3/1	164	65.6	29.7	43.6
Baree Midway	15B16	4600	3/1	132	47.5	19.9	34.6
Baree Trail	15B15	3800	3/1	40	13.1	1.6	10.5
Benton Meadow	16A02	2344	2/25	18	4.0	2.7	6.1
Benton Spring	16A03	4900	2/25	80	28.9	12.6	17.4
Boyer Mountain	17A02	5250	2/26	104	39.0	17.8	23.7
Brush Creek Timber	14A04	5000	2/25	39	11.0	6.6	10.2
Heart Lake Trail	14C10	4800	3/1	89	28.6	8.2	21.2
Hoodoo Basin	15C10	6000	3/1	169	63.4	31.5	46.1
Hoodoo Creek	15C01	5900	3/1	163	58.6	29.4	43.2
Lookout	15B02	5250	2/26	130	43.7	17.9	32.7
Mosquito Ridge	16A04A	5100	3/7	149	54.4	24.2	34.7
Nelson	19-Can	3050	2/28	77	20.0	10.6	14.5*
Schweitzer Bowl	16A06	4500	3/1	130	49.5	21.2	-
Schweitzer Ridge	16A05	6100	3/1	166	61.5	32.0	-
Winchester Creek	17A03	2970	2/26	53	13.8	6.2	12.1

KETTLE RIVER

Barnes Creek	90-Can	5300	3/3	72	22.0	13.8	18.0*
Big White Mountain	154-Can	5500	2/26	69	26.6	14.1	16.9*
Boulder Road	18A02	1450	2/27	8	2.2	2.2	4.9
Butte Creek	18A03	4070	2/27	39	10.2	7.1	9.3
Cabin Creek	18A08	3170	2/27	36	9.8	5.7	8.2
Carmi	126-Can	4100	2/26	32	8.0	3.8	6.1*
Farron # 1	17-Can	4000	2/27	60	17.8	11.4	12.4*
Farron # 2	243-Can	4000	2/27	58	17.7	10.2	New Course
Goat Creek	18A04	3595	2/27	32	8.7	4.9	7.1
Graystoke Lake	5-Can	5950	2/25	72	23.8	13.8	18.7*
Monashee Pass	48A-Can	4500	3/1	50	13.2	10.3	12.7*
Old Glory Mountain	42-Can	7000	2/24	110	38.0	20.2	24.6*
Snow Caps Creek	18A05	2150	2/27	21	6.1	2.5	5.1
Snow Caps Trail	18A06	2720	2/27	28	7.2	3.0	6.7
Summit G. S.	18A07	4600	2/27	32	10.1	6.0	7.4
Trapping Creek Lower	166-Can	3050	2/26	28	7.0	2.7	5.1*
Trapping Creek Upper	165-Can	4450	2/26	49	13.4	7.6	8.9*

# Average based on 1958-72 average

\* Average for years of record



## SNOW DATA TO MARCH 1, 1974 - APPENDIX 2

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #

COLVILLE RIVER

Baird	17A06	3215	2/27	36	9.5	5.7	7.1
Carlson	18A09	2885	3/2	11	2.4	2.3	4.6
Stranger Mountain	17A05	4990	3/2	68	21.8	8.9	13.1
Togo	18A10	3370	3/2	55	16.6	6.0	10.9

SPOKANE RIVER

Above Burke	15B08	4100	2/26	91	27.0	8.7	--
Copper Ridge	16B02	4800	2/28	125	45.1	10.7	25.7
Forty-nine Meadows	15B02	5000	Late Report			14.6	--
Fourth of July Summit	16B03	3100	3/4	48	13.5	1.9	7.3
Granite Peak	15B13A	6000	Late Report			26.3	--
Lookout	15B02	5250	2/26	130	43.7	17.9	32.7
Lost Lake	15B14A	6000	Late Report			30.7	--
Lower Sands Creek	16B01	3400	2/26	84	26.8	7.1	17.5
Medicine Ridge	15B04A	6150	Late Report			25.9	--
Mosquito Ridge	16A04A	5110	3/7	149	54.4	24.2	34.7
Roland Summit	15B05A	5200	3/7	166	54.1	--	31.3
Sherwin	16C01	3200	2/26	60	20.0	5.2	13.8
Sunset	15B09A	5600	Marker Buried			--	--
Kellogg Peak	16B05A	5560	3/7	125	41.4	--	--

OKANOGAN RIVER

Aberdeen Lake	6A-Can	4300	2/28	30	7.3	3.7	5.9*
Blackwall Mountain	100-Can	6250	2/22	119	42.6	22.0	32.4*
Bouleau Creek	31-Can	5000	2/27	46	13.5	8.3	10.5*
Bouleau Lake	234-Can	4580	2/27	60	16.0	9.8	13.3*
Brenda Mine	193-Can	4800	2/26	54	15.6	9.4	12.8*
Brookmere	27-Can	3200	2/27	40	11.9	4.5	9.0*
Carrs Landing Upper	168-Can	3200	3/1	20	4.6	2.6	4.5*
Clark +	19A08a	7000	3/2	78	26.5	-	19.7
Enderby	130-Can	6250	2/25	130	42.7	26.9	32.4*
Esperon Creek Lower	164-Can	4400	2/25	54	15.0	8.4	10.9*
Esperon Creek Middle	163-Can	4700	2/25	66	20.5	9.9	13.5*
Esperon Creek Upper	162-Can	5400	2/25	76	25.0	10.4	16.5*
Freezeout Meadows New	20A38	5000	3/7	179	73.3	19.9	--
Graystoke Lake	5-Can	5950	2/25	72	23.8	13.8	18.7*
Hamilton Hill	107-Can	4900	2/25	58	10.7	9.7	14.2*
Harts Pass	20A05A	6500	3/3	163	64.4	29.3	38.5
Horseshoe Basin +	19A05a	7000	3/3	63	21.4	10.2	11.6

# Average based on 1958-72 average

\* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation





## SNOW DATA TO MARCH 1, 1974 - APPENDIX 3

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

OKANOGAN RIVER (Cont.)

Isintok Lake	152-Can	5510	3/3	42	12.3	5.8	7.5*
Lost Horse Mountain	105-Can	6300	2/28	44	12.7	6.1	8.5*
Loup Loup	19A07	4650	2/26	50	15.4	6.6	9.5
McCulloch	4-Can	4200	2/24	38	8.4	4.3	6.2*
Missezula Mountain	106-Can	5100	2/24	47	13.9	-	8.8*
Mission Creek	5A-Can	6000	2/27	81	25.6	12.4	17.3*
Monashee Pass	48A-Can	4500	3/1	50	13.2	10.3	12.7*
Mount Kobau	156-Can	5950	2/28	60	19.2	7.4	11.8*
Muckamuck +	19A09a	6390	3/2	73	24.8	-	15.1
Mutton Creek No. 1	19A01	5700	2/26	67	22.4	9.5	12.9
Mutton Creek No. 2	19A04	6000	2/26	63	21.4	8.9	13.3
Mutton Creek No. 2 SP	19A11SP	6000	2/26	-	17.4	6.4	New
New Copper Mountain	46A-Can	4300	2/26	30	8.4	3.7	5.8*
New Penticton Res. # 2	183-Can	5225	3/2	45	10.9	5.6	7.6*
Nickel Plate Mountain	47-Can	6200	2/27	45	12.0	4.5	7.1*
Oyama Lake	203-Can	4400	2/26	31	8.6	5.7	6.3*
Paysayten +	20A28a	4300	3/3	66	22.4	9.9	15.4
Postill Lake	55-Can	4500	2/28	41	10.5	5.0	7.4*
Quartette Lake	34-Can	4000	2/26	51	17.3	6.6	-
Rusty Creek	19A03	4000	2/25	37	11.8	4.6	7.1
Salmon Meadows	19A02	4500	2/26	50	14.8	6.8	9.9
Silver Star Mountain	99-Can	6050	2/25	101	35.9	19.2	23.8*
Starvation Mountain +	19A10a	6750	3/2	78	26.5	-	18.3
Summerland Reservoir	3A-Can	4200	3/3	41	12.1	6.0	8.7*
Touts Coulee	19A06	2845	2/27	21	5.7	2.2	4.0
Trout Creek	3-Can	4700	2/26	38	9.4	4.8	6.4*
Vasseux Creek	233-Can	4600	3/2	41	11.2	3.8	7.2*
White Rocks Mountain	70-Can	6000	2/27	89	30.9	16.6	18.9*

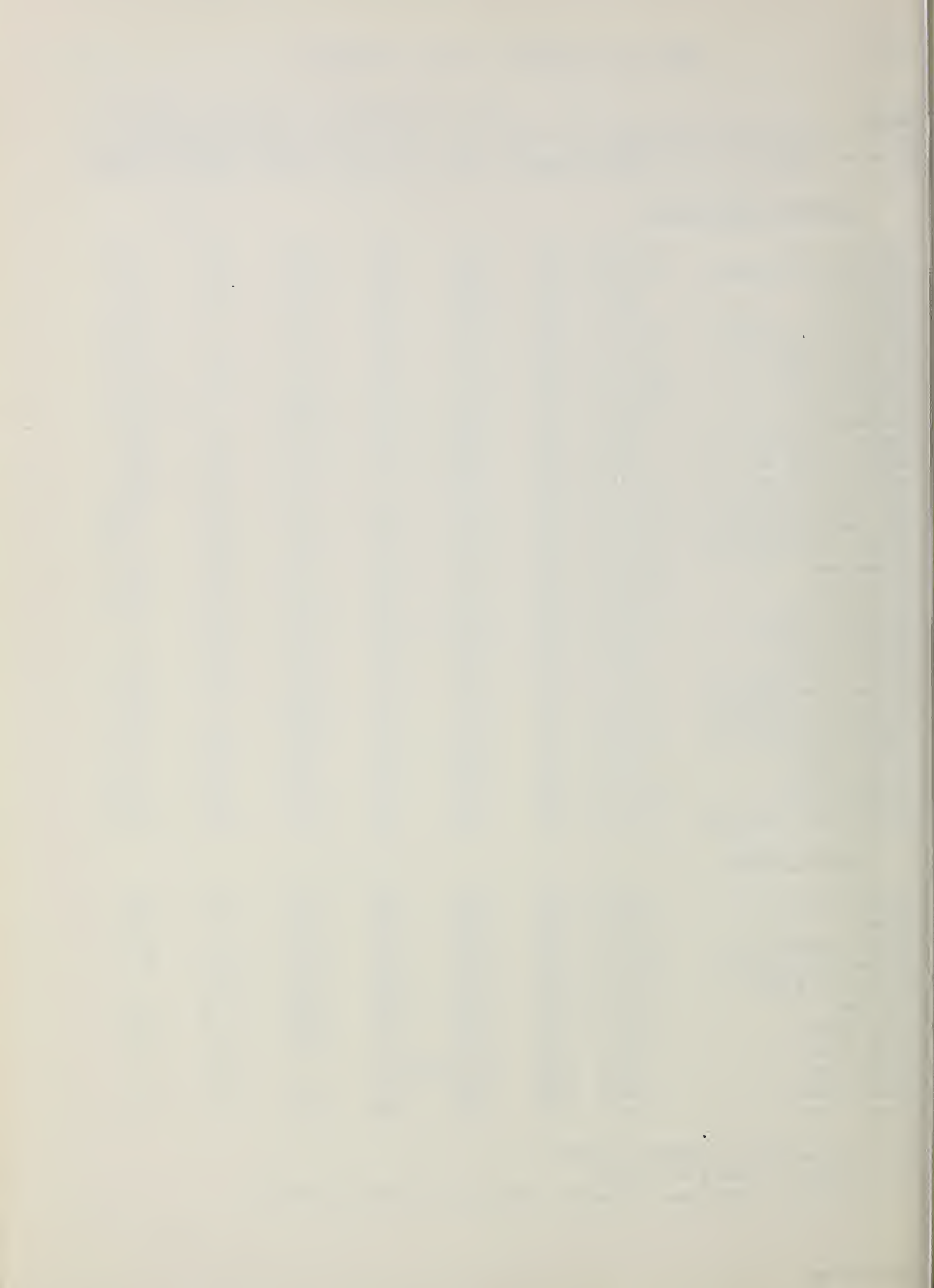
ENTIAT RIVER

Blue Creek G. S.	20B28a	5425	2/28	138	44.7	26.9	New
Brief	20B19	1600	2/26	18	6.6	-	7.5
Entiat Meadows +	20A33a	4800	2/28	174	56.4	31.7	45.7
Entiat River Trail +	20A34a	3150	2/28	88	28.5	11.9	21.8
Four Mile Ridge +	20B27a	7000	2/28	124	40.2	20.7	-
Fox Camp +	20A36a	6510	2/28	182	59.0	37.9	54.6
Pope Ridge	20B20	4300	2/26	80	25.9	11.7	16.5
Pugh Ridge +	20A32a	6400	2/28	125	40.5	25.5	34.5
Shady Pass	20A37	6200	Not Measured			19.8	-
Snow Brushy +	20A35a	3850	2/28	141	45.7	25.8	37.7
Tommy Creek +	20B21a	5300	2/28	108	35.0	15.7	28.3

# Average based on 1958-72 average

\* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation



## SNOW DATA TO MARCH 1, 1974 - APPENDIX 4

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #

METHOW RIVER

Billy Goat Pass +	20A10a	6409	3/3	102	36.7	-	25.8
Dollar Watch +	20A29a	7000	3/3	102	34.7	17.6	25.8
Harts Pass	20A05A	6500	3/3	163	64.4	29.3	38.5
Horseshoe Basin +	19A05a	7000	3/3	63	21.4	10.2	11.6
Loup Loup	19A07	4650	2/26	50	15.4	6.6	9.5
Mutton Creek No. 1	19A01	5700	2/26	67	22.4	9.5	12.9
Mutton Creek No. 2	19A04	6000	2/26	63	21.4	8.9	13.3
Mutton Creek No. 2 SP	19A11SP	6000	2/26	-	17.4	6.4	New
Rusty Creek	19A03	4000	2/25	37	11.8	4.6	7.1
Salmon Meadows	19A02	4500	2/26	50	14.8	6.8	9.9
War Creek Pass +	20A31a	6500	3/2	153	55.1	31.1	40.5

CHELAN LAKE BASIN

Greenwood Flat +	20A25a	3540	3/3	100	36.0	18.9	22.9
Little Meadows +	20A24a	5275	3/2	180	64.8	32.6	39.9
Lyman Lake	20A23A	5900	Marker Down			44.0	52.5
Park Creek Flat +	20A13a	2220	3/3	121	43.6	20.4	31.4
Park Creek Ridge	20A12A	4600	3/3	182	65.5	35.9	41.9
Petersons +	20A16a	3730	3/3	112	40.3	26.6	32.9
Rainy Pass	20A09	4780	3/3	144	51.4	27.4	36.0
Safety Harbor	20A30A	6300	Marker Buried			22.2	25.7
War Creek Pass +	20A31a	6500	3/2	153	55.1	31.1	40.5

WENATCHEE RIVER

Berne-Mill Creek	21B23	3170	2/14	102	36.3	15.0	23.9
			2/27	111	43.0	14.7	24.7
Berne-Mill Creek New SP	21B41SP	3240	2/27	100	38.0	11.7	21.0
Blewett Pass No. 2	20B02	4270	2/26	66	22.5	6.9	14.9
Chiwaukum G. S.	20B16	1810	2/14	46	15.2	4.5	11.2
			2/27	49	17.0	4.7	11.6
Fish Lake	21B04	3371	2/26	125	45.2	17.8	31.3
Lake Wenatchee	20B05	1970	2/14	49	17.6	6.2	13.6
			2/27	51	19.7	6.2	13.9
Leavenworth R. S.	20B17	1127	2/15	6	2.3	3.1	5.7
			3/1	8	2.5	1.4	4.2
Lyman Lake	20A23A	5900	Marker Down			44.0	52.5
Merritt	20B18	2140	2/14	56	21.6	7.8	15.5
			2/27	59	22.9	7.8	15.2

# Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation





## SNOW DATA TO MARCH 1, 1974 - APPENDIX 5

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average <sup>#</sup>

WENATCHEE RIVER (Cont.)

Stevens Pass	21B01	4070	2/14	163	63.7	29.6	42.5
			2/27	185	73.5	29.6	45.7
Stevens Pass Sand Shed	21B45	3700	2/14	136	52.3	18.0	-
			2/27	147	57.0	18.3	-

SQUILCHUCK CREEK

Beehive Springs	20B03	4400	2/27	39	14.5	5.8	7.9
Scout-A-Vista	20B04	3400	2/27	44	13.3	5.8	8.1

STEMILT CREEK

Jump-Off	20B08	4450	2/25	41	13.6	7.2	8.3
Stemilt Slide	20B06	5000	2/26	60	21.9	10.6	15.1
Upper Wheeler	20B07	4400	2/26	39	13.0	6.6	10.1

COLOCKUM CREEK

Colockum Creek Upper	20B22	5300	2/8	47	15.5	8.3	-
			2/25	56	21.3	9.5	-
Colockum Creek Lower	20B23	4300	2/25	39	11.5	6.2	-

YAKIMA RIVER

Ahtanum R. S.	21C11	3100	2/27	23	7.6	3.2	6.7
Big Boulder Creek	21B09	3200	2/26	88	31.6	8.9	18.5
Blewett Pass No. 2	20B02	4270	2/26	66	22.5	6.9	14.9
Bumping Lake	21C08	3450	2/12	66	21.1	7.9	15.2
			3/1	79	25.9	7.7	15.3
Bumping Lake New	21C36	3400	2/12	77	26.6	9.6	19.6
			3/1	95	31.9	10.2	20.0
Cayuse Pass	21C06	5300	2/27	257	99.5	45.4	70.4
Colockum Pass	20B09	5370	2/25	63	21.6	9.9	14.5
Cooke Creek	20B10	4123	2/25	36	11.0	3.5	6.1
Corral Pass	21B13	6000	3/7	154	52.0	22.2	34.5
Fish Lake	21B04	3371	2/26	125	45.2	17.8	31.3
Green Lake	21C10	6000	2/26	115	37.3	19.7	29.1
Grouse Camp	20B11	5385	2/26	71	24.3	-	15.3
High Creek	20B12	2930	2/26	28	9.1	3.7	5.2
Joe Lake +	21B46a	4624	2/27	225	81.0	27.8	-
Lake Cle Elum	21B14M	2200	2/15	28	9.8	-	8.2
			2/28	37	11.9	1.8	8.1
Lemah Creek +	21B47a	3327	2/27	153	55.1	22.2	-

# Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation



## SNOW DATA TO MARCH 1, 1974 - APPENDIX 6

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average $\frac{\#}{\#}$

YAKIMA RIVER (Cont.)

Manashtash	20C01	3935	2/22	24	6.6	2.0	4.3
Morse Lake	21C17	5400	Not Measured			36.5	47.5
Nanum	20B13	2340	2/26	47	14.4	-	9.6
Olallie Meadows	21B02	3625	3/7	214	81.1	15.0	40.6
Satus Pass	20D01	4030	2/28	54	13.7	0.0	8.7
Stampede Pass SP	21B10	3860	2/14	-	60.0	19.0	34.2
			Pillow Flat			20.6	36.2
Trail Creek	20B14	3360	2/25	14	5.0	0.0	2.2
Tunnel Avenue	21B08	2450	2/14	85	28.8	10.2	20.1
			2/28	94	32.6	9.6	21.2
Van Epps Pass +	20B26a	5925	2/27	173	62.3	27.4	-
Walters Flat	20B15	3360	2/26	38	11.0	3.4	6.9
Waptus Lake +	21B49a	3024	2/27	144	51.8	21.1	-
White Pass (E. Side)	21C28	4500	2/13	85	27.7	9.3	20.8
			2/28	106	35.9	10.1	22.0
White Pass (L. Lake)	21C27	4500	2/26	108	35.9	11.2	26.1

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	2/27	23	7.6	3.2	6.7
Green Lake	21C10	6000	2/26	115	37.3	19.7	29.1

LOWER COLUMBIAASOTIN CREEK

Spruce Springs	17C04	5700	2/28	96	34.6	11.0	23.6
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MILL CREEK

Homestead	17C01	4030	2/27	47	17.2	3.5	7.4
Martin Springs	17C02	4400	2/27	69	23.5	4.4	11.9
Tollgate	18D3M	5070	2/28	117	42.4	12.0	21.1

KLICKITAT RIVER

Satus Pass	20D01	4030	2/28	54	13.7	0.0	8.7
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WHITE SALMON RIVER

Cultus Creek	21C12	4000	2/24	154	57.4	19.3	40.5
Surprise Lakes	21C13A	4250	2/24	168	64.0	19.5	44.2

# Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation





## SNOW DATA TO MARCH 1, 1974 - APPENDIX 7

**SNOW**

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average †

WIND RIVER

Old Man Pass	21D19	3100	2/24	71	23.4	5.2	17.2
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LEWIS RIVER

Blue Lake +	21C22a	4800	2/24	254	96.5	38.5	69.7
Bob's Trail	21C21	2200	2/24	56	20.3	3.3	14.2
Calamity Ridge +	22D01a	2500	2/24	12	4.2	0.3	6.7
Council Pass +	21C18a	4200	2/24	149	56.6	19.6	37.1
Cultus Creek	21C12	4000	2/24	154	57.4	19.3	40.5
Divide Meadow +	21C29a	5600	2/24	168	63.8	23.6	50.9
Grand Meadow	21C25	3500	2/24	96	35.2	9.5	23.8
Lone Pine Shelter	21C26	3800	2/27	169	59.6	15.9	35.0
Marble Mountain +	22C05a	3200	2/24	126	54.2	9.4	31.4
Mosquito Meadows	21C19	4100	2/27	156	52.8	16.7	36.6
New Muddy River	22C06	2000	2/24	17	5.9	0.0	10.6
Old Man Pass	21D19	3100	2/24	71	23.4	5.2	17.2
Plains of Abraham +	22C01a	4400	2/24	207	80.7	34.8	58.5
Smith Creek Road	22C04	2100	2/24	49	19.8	5.2	17.2
Spencer Meadow +	21C20a	3400	2/24	101	37.4	8.0	21.5
Surprise Lakes	21C13A	4250	2/24	168	64.0	19.5	44.2
Table Mountain +	21C24a	4200	2/24	168	63.8	22.8	41.7
Timbered Peak +	21D18a	3000	2/24	74	25.9	5.2	16.0

COWLITZ RIVER

Cayuse Pass	21C06	5300	2/27	257	99.5	45.4	70.4
Mosquito Meadows	21C19	4100	2/27	156	52.8	16.7	36.6
Ohanapecosh	21C32	2200	2/27	54	18.9	3.0	15.8
Packwood Lake	21C31	2870	2/25	53	19.2	2.0	12.7
Pigtail Peak	21C33	5900	2/15	Not Measured		31.2	55.1
			2/26	186	69.8	33.0	57.2
Plains of Abraham +	22C01a	4400	2/24	207	80.7	34.8	58.5
Potato Hill	21C14	4500	2/28	128	43.1	14.0	28.8
White Pass (E. Side)	21C28	4500	2/13	85	27.7	9.3	20.8
			2/28	106	35.9	10.1	22.0
White Pass (L. Lake)	21C27	4500	2/15	Not Measured		-	20.7
			2/26	108	35.9	11.2	26.1
Willame Creek	21C30	3250	2/26	118	43.6	10.6	26.9

# Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation



## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average <sup>#</sup> / <sub>7</sub>

PUGET SOUND DRAINAGENISQUALLY RIVER

Ghost Forest	21C04	4550	2/25	160	58.5	22.0	39.0
Longmire	21C03	2760	2/25	50	19.7	1.5	9.0
New Paradise Park	21C35	5500	2/25	219	87.2	38.4	61.8
Stem Glade	21C01	5050	2/25	216	80.7	36.1	60.5

WHITE RIVER

Cayuse Pass	21C06	5300	2/27	257	99.5	45.4	70.4
Corral Pass	21B13	6000	3/7	154	52.0	22.2	34.5
Morse Lake	21C17	5400	Not Measured			36.5	47.5

GREEN RIVER

Airstrip	21B24	1800	3/3	7	2.0	0.0	4.4
Charley Creek	21B25	1200	3/3	0	0.0	0.0	1.2
Cougar Mountain SP	21B42SP	3200	2/28	83	31.0	7.6	-
Grass Mtn. No. 2	21B27	2900	3/3	95	34.7	8.5	19.4
Grass Mtn. No. 3	21B28	2100	3/3	17	5.8	0.0	5.7
Lester Creek	21B29	3100	3/3	106	35.8	10.9	21.3
Lynn Lake	21B50	4000	Not Measured			4.2	-
Sawmill Ridge	21B31	4700	3/3	148	52.4	16.1	34.1
Snowshoe Butte SP	21B43SP	5000	3/7	222	90.6	29.0	-
Stampede Pass SP	21B10	3860	2/14	-	60.0	19.0	34.2
			Pillow Flat			20.6	36.2
Twin Camp	21B30	4100	3/3	110	38.0	11.7	21.6

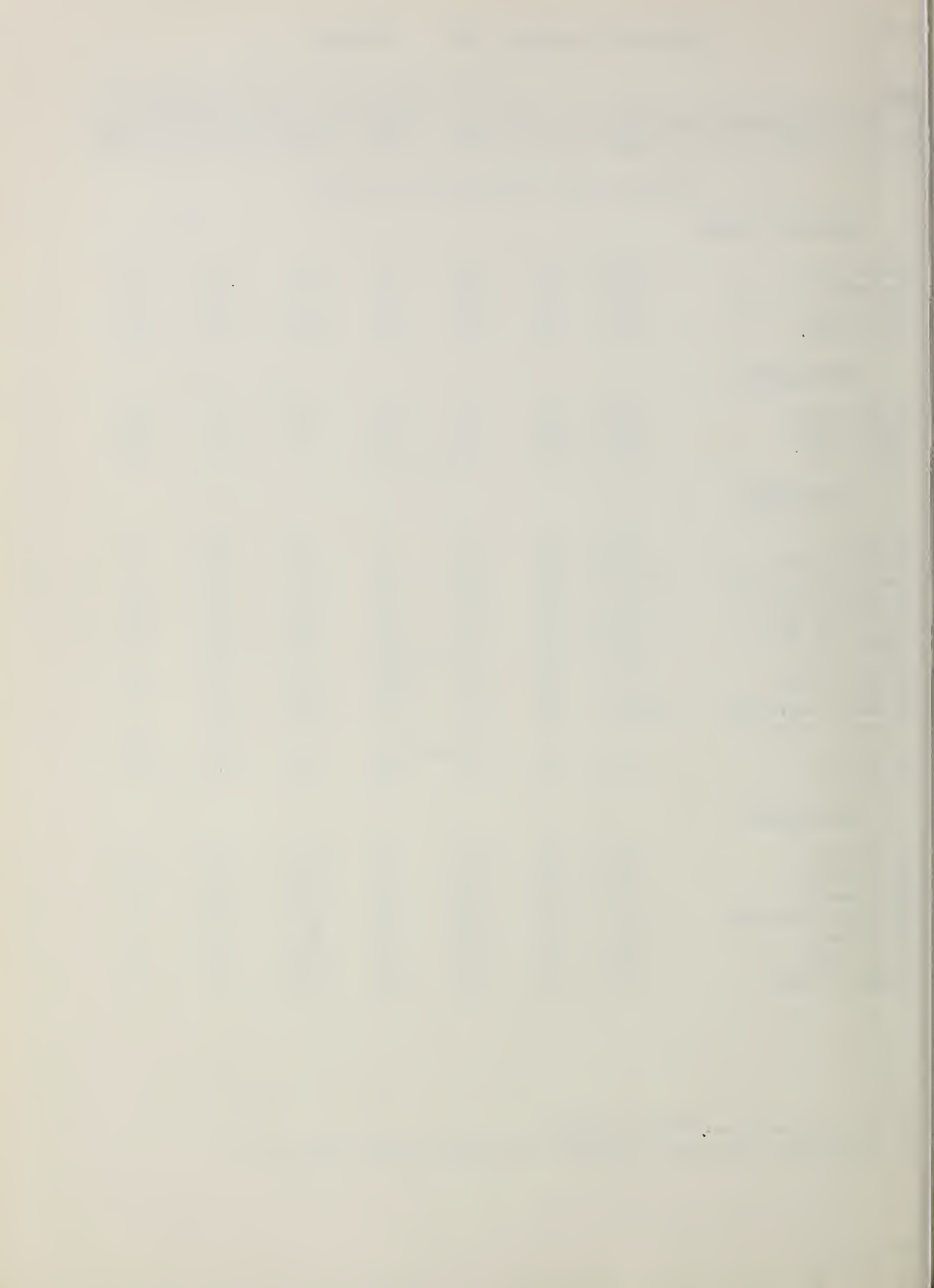
CEDAR RIVER

City Cabin	21B03	2390	3/2	82	29.0	4.2	13.5
Mt. Gardner	21B21	3300	2/27	87	31.8	1.5	15.6
Mt. Lindsay	21B16	2500	2/28	65	22.6	6.8	12.8
Mt. Washington New	21B52	3000	2/28	53	16.4	0.0	-
Rex River	21B17	2400	2/26	80	28.6	6.0	8.9
S. F. Cedar	21B06	3000	3/2	95	32.6	5.3	17.3
Tinkham Creek	21B20	3400	2/27	121	41.8	6.7	20.0

# Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation





## SNOW DATA TO MARCH 1, 1974 - APPENDIX 9

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average†

SNOQUALMIE RIVER

Alpine Meadow	21B48	3500	2/27	171	60.5	15.9	--
Lake Elizabeth	21B19	2900	2/27	172	65.7	12.8	36.4
Olallie Meadows	21B02	3625	3/7	214	81.1	15.0	40.6
S. F. Tolt	21B18	1900	3/1	7	2.4	0.0	2.7

SKYKOMISH RIVER

Lake Elizabeth	21B19	2900	2/27	172	65.7	12.8	36.4
Stevens Pass	21B01	4070	2/14	163	63.7	29.6	42.5
			2/27	185	73.5	29.6	45.7
Stevens Pass S. Shed	21B45	3700	2/14	136	52.3	18.0	--
			2/27	147	57.0	18.3	--

SKAGIT RIVER

Beaver Creek Trail	21A04	2200	3/7	62	21.0	8.0	13.0
Beaver Pass	21A01	3680	3/7	135	44.6	16.7	28.3
Brown Top	21A28a	6000	3/6	222	90.6	43.2	--
Cloudy Pass	20A22a	6500	Not Measured			30.0	37.4
Devils Park	20A04	5900	3/3	154	61.5	30.5	39.4
Freezeout Cr. Trail	20A01	3500	Late Report			8.6	11.8
Freezeout Meadows New	20A38	5000	3/7	179	73.3	19.9	25.7
Granite Creek	21A29	3500	3/3	77	24.8	11.6	--
Harts Pass	20A05A	6500	3/3	163	64.4	29.3	38.5
Hozomeen Lake	21A02	2600	Not Measured			4.2	8.6
Klesilkwa	35B-Can	3700	3/1	71	20.7	5.6	13.0*
Lyman Lake +	20A23A	5900	Marker Down			44.0	52.5
Meadow Cabins	20A08	1900	3/3	23	6.0	2.5	6.8
New Hozomeen Lake	21A30	2800	3/7	67	20.2	7.0	--
New Tashme	26A-Can	2500	2/28	48	15.8	4.6	11.2*
Quartette Lake	34-Can	4000	2/26	51	17.3	6.6	--
Rainy Pass	20A09	4780	3/3	144	51.4	27.4	36.0
Thunder Basin	20A07	4200	3/3	93	30.7	13.4	19.8

BAKER RIVER

Panorama New	21A26	4300	2/12	211	101.3	--	--
			2/29	229	109.9	48.7	--

# Average based on 1958-72 average

\* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation



## SNOW DATA TO MARCH 1, 1974 - APPENDIX 10

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average <sup>#</sup>

NOOKSACK RIVER

Bald Mountain +	21A19a	4400	2/27	183	69.5	30.4	42.9
Canyon +	21A20a	5100	2/27	221	84.0	50.3	48.3
Glacier Creek	21A23	3700	2/28	117	36.8	9.8	21.6
Panorama New	21A26	4300	2/12	211	101.3	44.7	--
			2/26	229	109.9	48.7	--
Twin Lakes +	21A21a	5200	2/27	243	92.3	56.9	62.3

OLYMPIC PENINSULAMORSE CREEK

Cox Valley	23B14	4500	3/3	154	54.4	22.5	--
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ELWHA RIVER

Hurricane	23B03	4500	2/23	92	30.2	12.1	20.0
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SKOKOMISH RIVER

Black & White	23B07	4200	3/6	160	55.2	26.1	33.5
Black & White Lakes	23B06	4700	3/6	205	78.0	41.4	49.9
Four Streams	23B10	3000	3/6	134	53.4	12.9	27.0
Home Sweet Home	23B05	5200	3/6	232	88.0	46.7	64.5

# Average based on 1958-72 average

+ Snow water equivalent estimated from aerial stadia observation





# Agencies Assisting with Snow Surveys

## GOVERNMENT AGENCIES

### Canada:

Department of Lands, Forests and Water Resources,  
Water Resources Service, British Columbia

### States:

Washington State Department of Ecology  
Washington State Department of Natural Resources

### Federal:

Department of the Army  
Corps of Engineers  
U. S. Department of Agriculture  
Forest Service  
U. S. Department of Commerce  
NOAA, National Weather Service  
U. S. Department of the Interior  
Bonneville Power Administration  
Bureau of Reclamation  
Geological Survey  
National Park Service

## PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.  
Pacific Power and Light Company  
Puget Sound Power and Light Company  
Washington Water Power Company

## OTHER PUBLIC AGENCIES

Okanogan Irrigation District  
Wenatchee Heights Irrigation District

## MUNICIPALITIES

City of Tacoma  
City of Seattle

*Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.*

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